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STORAGE



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Ontario Hydro-Electric Power Commission

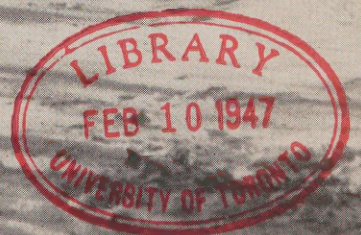
HYDRO News



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STORM SETTING



SAVE ELECTRICITY!

Acute Shortage Continues in Southern Ontario

With the critical shortage of power continuing in Southern Ontario, it is most necessary that everyone co-operate in saving electricity. The need is urgent. It affects the welfare of everyone. Do your part by saving electricity by every means at your command.

THE DAILY PERIOD DURING WHICH SAVINGS SHOULD BE EFFECTED IS BETWEEN 8 A.M. AND 8 P.M., AND CONDITIONS ARE PARTICULARLY ACUTE BETWEEN 4 P.M. AND 7 P.M.

HERE ARE SOME OF THE WAYS YOU CAN HELP

IN THE HOME

Turn off lights when not required.
Use the minimum number of lights in the living-room, consistent with good vision.
Use electrically heated water sparingly and check leaking hot water taps.
Do not use range elements on "high" when a lower heat will serve, and turn off all elements as soon as possible.
Cook oven meals as often as possible and avoid the unnecessary use of surface elements.
Turn off verandah and other outside lights.
Turn off all small appliances as soon as possible.
Do not use electric air heaters and grates.

IN STORES AND OFFICES

Eliminate the use of electricity for signs and store windows from 8 a.m. to 8 p.m.
Turn off all lights when not required.
Use electrically heated water sparingly and check leaking hot water taps.
Do not use electric air heaters.

IN INDUSTRIES

Switch from day to night operations wherever practicable.
Turn off factory and office lights when not needed.
Turn off motor-driven machines when not required and effect other savings wherever possible.
Avoid the use of all non-essential outdoor lighting.
Do not use electric space heaters.

THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO



THE HYDRO - ELECTRIC POWER COMMISSION OF ONTARIO

PUBLISHED BY THE HYDRO-ELECTRIC
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THE FRONT COVER



THIS month's front cover illustration portrays just one of many arresting settings created by the recent storms which lashed trees and lines in many sections of Hydro's Southern Ontario system. Hydro repair crews who worked day and night to restore and maintain service were not exactly in the mood to appreciate Nature and the cold, glittering beauty of the landscape as portrayed on this front cover picture.

Volume 34

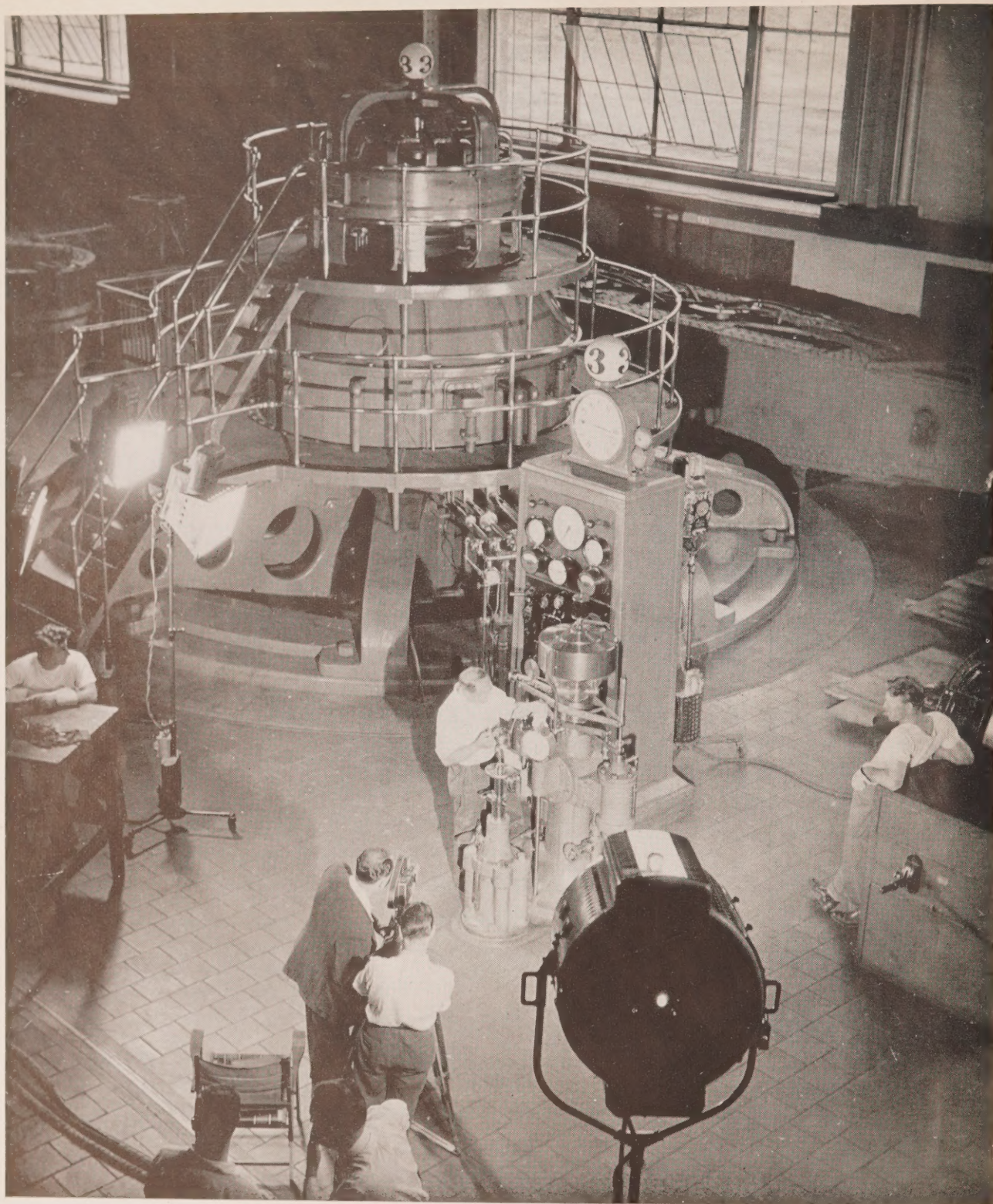
January, 1947

Number 1

CONTENTS

	Page
Movie Production - - - - -	2
Page Three - - - - -	3
Hydro On Celluloid - - - - -	4
London's Renovated Showroom - - - - -	8
Brantford Really On Map - - - - -	10
Hydro Paces Progress As Trenton Marches On - - - - -	12
Storm - - - - -	15
Why Group Surveys For Tuberculosis - - - - -	19
Urges Regular Investigation - - - - -	20
Child's Death Caused By Defective Lamp - - - - -	21
Around The Hydro Circuit - - - - -	22
B. O. Salter Retires - - - - -	23
Hydro Home Forum - - - - -	24
Lighter Lines - - - - -	25
Beck Is Appointed - - - - -	26
Power Plants - - - - -	27
This And That - - - - -	28
William Kress Dies - - - - -	29
No. 3 Bank At Burlington Substation - - - - -	30
Hydro At Work - - - - -	31
Monthly Load Summary - - - - -	31
Index For 1946 - - - - -	32





Picture of the Month

SHOOTING A scene at the Queenston-Chippawa plant for the new Hydro film "Niagara—the Powerful." Camera and lights are focused on a maintenance man oiling dashpot of the governor.

POWER SHORTAGE

FOR forty years The Hydro-Electric Power Commission of Ontario has been developing the water power resources of the province and providing electrical services in the interest of all classes of consumers. Clearing of sites, construction of plant, the building of transmission and primary distribution lines—these undertakings all take time and are dependent upon labour and material supply. For this reason it has always been the policy of the Commission to plan its developments well in advance so that a reserve of power will be available to meet anticipated demands.

Major power developments take several years to complete, and before the war the Commission was taking the preliminary steps to meet the situation that exists today. When the entire resources of the Commission became engaged in the war effort, it was impossible to proceed further with the developments planned. Apart from the fact that a concentration on plant activity was necessary in order that the munition industry might be supplied with an uninterrupted supply of power, labour and material were not available for new construction. For six years no new developments, not directly applicable to the war production programme, could be undertaken, and it was necessary to impose restrictions on the use of electricity by domestic and commercial consumers.

It was expected that when victory was achieved there would have been a temporary respite and that the Commission would have been afforded an opportunity to put its house in order to meet the demands of normal, peace-time conditions. No such opportunity has been afforded. The demand for power has been greater than ever, while the conditions governing labour and, especially, material supply, although for different reasons, have been as difficult as they were during the war years.

In brief, the Commission, in its power development and construction programmes, has been unable to match strides with the increasing demand for electricity, and a critical power shortage has developed. This situation is not unique in Ontario. It prevails throughout Canada, the United States and the rest of the world—an aftermath of conditions resulting from the war.

The heaviest demand on electrical services in Ontario is during the winter months, and the Commission has made an urgent appeal to all Southern Ontario municipalities to co-operate voluntarily in exercising the strictest economy in the use of electricity until the beginning of March. Details of the methods by which conservation can be achieved have been given in the daily press and

in the December issue of Hydro News. Here it will suffice to state that Hydro's task of providing sufficient power to tide over the present critical period will be made much easier of accomplishment through the co-operation of consumers. For its part, the Commission is doing everything it can to meet the situation.

EDUCATIONAL MEDIUM

ALL pictures have a story to tell, but through the action which the movie alone provides the story can often be more readily interpreted. This is the reason why the educational film is playing a popular role today in all fields of instruction. In the schools its judicious use implements oral teaching. It visualizes the value of knowledge in the various vocations and activities of life and thus stimulates the student's interest in his subject. Outside the auditorium and the class room, the film is an important instrument of publicity.

Many of the activities of Hydro are well adapted to film interpretation. A good picture is a means of educating the public to a better understanding of the work upon which the Commission and its associated municipal utilities are engaged, and of its key position in the general economy. Through the film, too, the benefits to be derived from electrical services can be emphasized.

Hydro has been using films for the past six years. It has had a fascinating subject to present, or rather a series of fascinating subjects, since the Commission's activities are as varied as they are interesting. "The Bright Path" was the first picture made, and its arresting settings gave it a high entertainment value. This was followed by "The Keepers of the Light", which, as a film descriptive of Hydro's contribution to the war effort, naturally, had a powerful dramatic motif. One of the most ambitious of the war-time films was the "Romance of a River" which was sent overseas for special showing in Canadian army camps.

The first post-war film, "More Power to the Farmer", represents a change in direction in keeping with the renewed demand for information about electrical services. In this picture a practical, helpful story of direct interest to the farm consumer has been substituted for the glamour of achievement.

More films of this very instructive type are being planned by the Commission and, at present a two-reel colour film entitled "Niagara The Powerful," is nearing completion. Dealing with Niagara developments, particularly the Queenston-Chippawa plant, this film, it is expected, will be available for showing in the course of the next few months.



**By Mildred C. Redmond,
Hydro News**

Hydro films, telling the story of Hydro in Ontario, have been seen by nearly three-quarters of a million people in the last six years and have been shown not only throughout Ontario but in places as remote as Australia, New Zealand, and India and at the Canadian army centres in Europe.

Who are the audiences who see these films? They include lodges, all types of service clubs such as the Rotary, Lions and Kiwanis, church organizations, university groups and technical groups, and they have been used by the Department of Agriculture in connection with educa-

tional programmes, and they have also been screened at the Canadian National Exhibition as well as at dozens of local country fairs. They have also been featured as straight educational shorts in regular motion picture theatres, "Keepers of the Light," for example, having been shown in over 120 Ontario theatres as part of the regular programmes.

Perhaps the most important section of the big Hydro audience is the children. These films have been shown in literally hundreds of Ontario schools. In Toronto alone over 80 schools have seen one of the films during the last few months. The fact that the children are keenly interested in the films is shown by their remarks—"It's the best film we've seen"—is typical, and by their enthusiastic de-

mand for a return call by the Hydro man. Sometimes when a film is shown in schools it is accompanied by an animal cartoon. When a film goes out a Hydro man goes along to operate the projector and give a short, introductory talk. Hydro furnishes an evening of education and entertainment to any group that asks for it. There are now three projectors and they are kept busy all the time. One set of equipment was available to the armed services all through the war and films have been shown both in army camps here and overseas.

Educational Value

Today, movies are playing an increasingly important part in education and
(Continued on page 6)

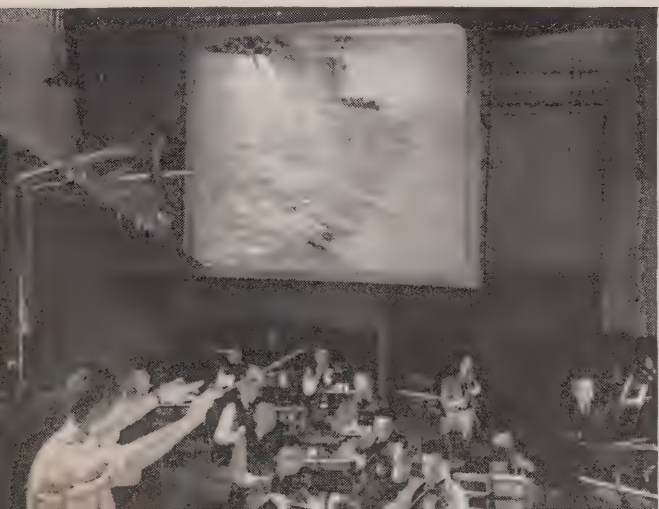


AMONG ADULT audiences that ask for Hydro films are lodges, all types of service clubs, church organizations, university groups and technical groups. This particular showing was at a dinner meeting of an insurance fraternity.



SHOOTING A scene from "More Power to the Farmer," a technicolour film showing the many ways Hydro can be put to use on an Ontario farm. To get the right sort of indoor shots this "barn" was reproduced in a studio. Here the director is giving last-minute instructions to the actor who is taking the part of the farmer.

SYNCHRONIZING MUSIC to match a film is quite a job in itself. In order to get perfect timing the orchestra that provided the music for "The Bright Path" had to rehearse a number of times with the film before the sound and film could be finally fitted together. The music being played here is suggestive of the mighty rush of falling water.





PRIVATE SCHOOLS also welcome Hydro films, among them this group of young misses from Moulton college. This represents one of the eighty schools in Toronto that have seen one of the films in the past few months. In attendance is J. A. Blay, assistant director of promotion.

(Continued from page 4)

instruction, the war having greatly accelerated experiments along this line. According to American surveys, for example, the navy can train a gunner more efficiently and in 45 per cent of the time by means of moving pictures. Cornell University has found that by teaching children with the aid of movies they can save 60 per cent of teaching time. Getting an idea over fast and vividly is just as valuable in business as it is in education. and sales organizations have not been slow to see the possibilities. Hydro, in using this medium, had a double motive, first to emphasize the benefits of electricity and, second, to educate the public into a better understanding of the scope and operations of Ontario's public ownership enterprise.

Up to 1936 there had been no organized plan of using films for publicity. There was a collection of slides that were sent out to schools and club meetings but it was done on a small scale. In 1938 the promotion department was organized with one section assigned to deal with slide and film work. Since then half a dozen interesting and instructive films have been produced and shown all over the province.

"The Bright Path" was the first picture completed and it had its first showing in Peterborough at the fall fair in

1940. It is a 16 mm. sound film in black and white and runs about 35 minutes. It is a Hydro story whose motif might be found in one of the opening sentences—"From the mad fury of water comes the power with which we build our bright new world." It is the dramatic story of the immense power that lies hidden in water, of the destructive quality of that power when it is uncontrolled and of the far reaching benefits it makes available to farm, factory, home and throughout a community when it is harnessed and put to use. In addition to giving a vivid impression of the vast natural water resources of Ontario, this film also emphasizes the enormous equipment and planning behind Hydro service. There are many excellent shots of some of the largest of the Hydro developments both under construction and in operation.

Taken in Natural Locale

Great care has been taken to obtain dramatic and, at the same time, authentic scenes of all the various Hydro activities in their natural locale. Producers and photographers have journeyed far into the heart of the north country taking heavy equipment with them. Photographing on sets as in Hollywood is child's play in comparison to filming projects out of doors where the weather, light and vari-

ous idiosyncrasies of nature and the local workmen have to be dealt with. Often cameras and equipment have had to be brought by sled to the location. One producer has confided that the more obscure the place, however, the more royal the treatment, and that never has he and his staff been so well looked after as they were in the farthest north construction camp where all food and supplies must be flown in. He says, too, that the local workmen make excellent material for shots provided that you don't try anything fancy on them and let them be photographed at their own jobs. When the photographer goes on location in the far north in winter he has an additional problem of having his camera freeze up. However, the solution to that one is to oil the camera with whale oil.

It is characteristic of camera men to take risks to get just the right shot. During the filming of one construction job the photographer, anxious to get a certain angle over a canyon, persuaded the operator of a crane to allow him, and his precious camera to be swung out on the crane 160 feet from the earth. It was the crane operator that had the nervous breakdown afterwards, not the photographer!

After "The Bright Path" there followed

"Keepers of the Light" a single reel motion picture in black and white that takes approximately 10 minutes to run. It was made primarily to show the importance of Hydro in Ontario's war effort, and presents, visually, the fact that Ontario industry is 90 per cent electrified and, therefore, dependent upon Hydro. It shows electricity turning the wheels that produced the equipment that our fighting men used to such splendid effect.

Another short Hydro film, "Wardens of Power", was a specific piece of educational work to encourage the public to save power during war time.

One of the most ambitious of the films in Hydro's library is "Romance of a River," a 16 mm. sound film in colour. It has been shown not only to many local audiences but was sent overseas and screened for army camps during the war. Its subject is the broad and far-reaching undertaking known as the Ogoki Diversion. This plan, conceived some years ago, changes the northerly flow of a portion of the water of the Ogoki river to a southerly direction. Part of the water that formerly flowed into the Albany river and James Bay was made available for the generation of additional power and also improved transportation conditions on the Great Lakes system. The picture

makes a fascinating record of this unusual engineering achievement. Also shown is the new DeCew Falls development near St. Catharines where the diverted water, after flowing hundreds of miles in a southerly direction down through the Great Lakes, was first used for the generation of 65,000 electrical horsepower. Apart from the fact that the film makes an exceptionally interesting document of a Hydro project, it has been paid many compliments because it portrays an interesting and arresting panorama of the north country in all its natural colour and beauty.

Popular Farm Film

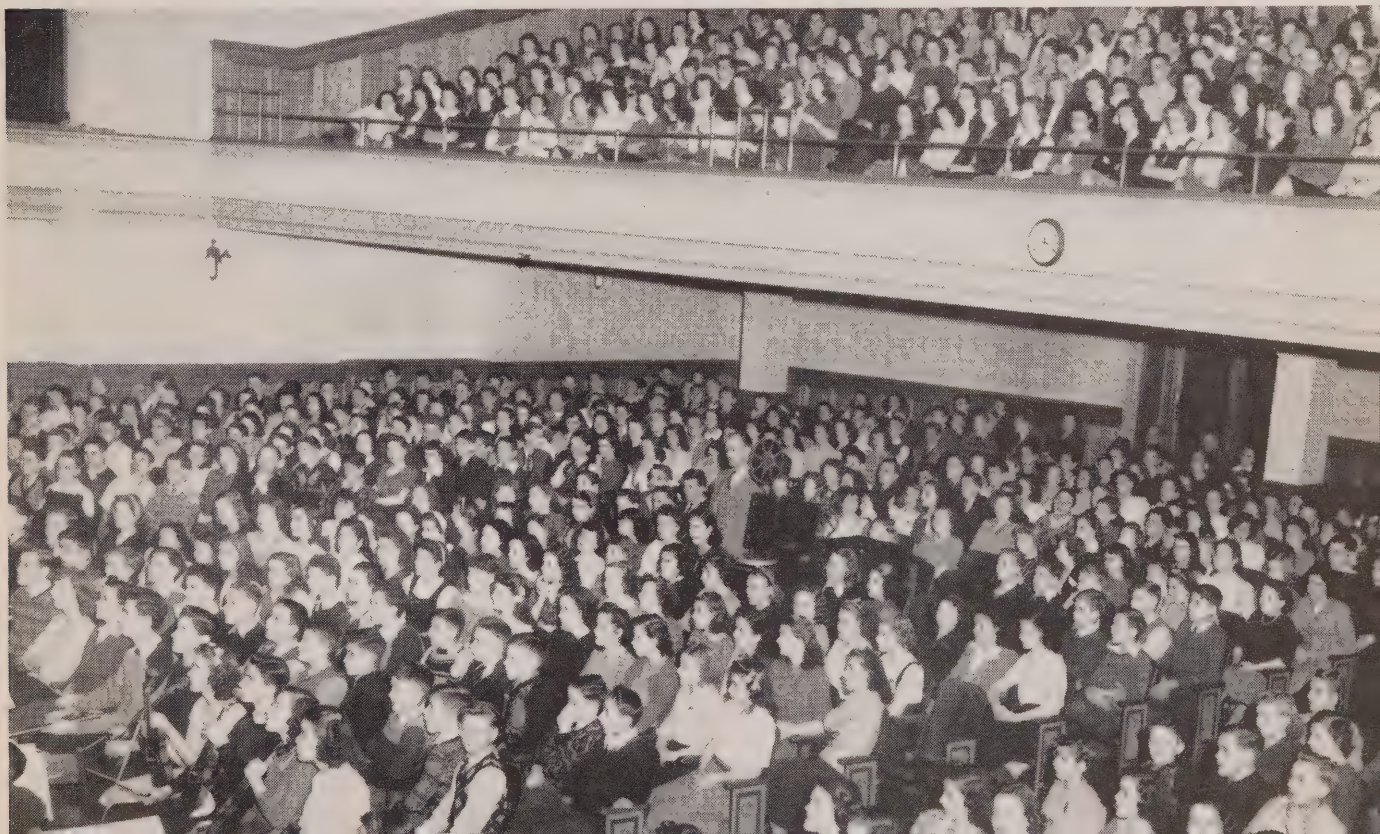
The most recent picture that has been produced is in the interests of the Ontario farmer and shows in a realistic and vivid manner the hundreds of ways that Hydro can be put to use on a farm to save labour and make farming a more profitable and attractive business. Entitled "More Power to the Farmer," it is also a technicolour production and runs about 20 minutes. Much of the filming was done on a typical Ontario farm but when it came to taking shots of barn interiors the photographers found it impossible to get the right lighting and acoustical conditions necessary for recording sound. So they built a faithful reproduction of a

suitably-equipped barn in a studio and did the filming there.

J. A. Blay, the Commission's assistant director of promotion, who directs the production of Hydro films, says that Hydro is counting on going ahead and making a further series of films as conditions warrant. A larger selection of films and more equipment will mean that much larger audiences will be reached. The department already has a constant demand for films and speakers, the scheduling and screening of these films coming under the direction of Harold K. Hillier. Any community in Ontario can get information about the films by asking the office of the local public utility or rural Hydro office.

The best publicity for the films, of course, is the films themselves, and the news that they are available soon gets around. Mr. Blay says that they have found that colour films are the more popular and that the most successful length seems to be about 20 minutes. Hydro is always ready to meet new requests for a showing of the films. They feel that if they can get across the idea that Hydro is a valuable public service owned and operated by the public themselves and do it in an interesting and vivid manner, then they will be doing a worth while job.

TYPICAL OF the many school audiences that have seen Hydro films is this large group at Parkdale collegiate. The Hydro man and his film always get an enthusiastic welcome from these youthful movie-goers. Running the projector is H. K. Hillier of the promotion department.



LONDON'S RENOVATED SHOWROOM KEYNOTES PROGRESSIVE SPIRIT

By Mildred C. Redmond,
Hydro News

They are very proud of their handsomely red-decorated showroom at the London Public Utilities Commission—and not without reason for it keynotes the progressive spirit which has been associated with Hydro since its inception in that city 36 years ago when E. V. Buchanan, its general manager, became identified with the local commission.

This shop was the first of its kind to open in Ontario and had to face considerable opposition by those who thought the city was overstepping itself when it first contracted for an amount of 3,000 horsepower. But in spite of difficulties and thanks to a well-organized and aggressive programme of publicity, demonstration and general salesmanship, the business

prospered and London rapidly became electricity-conscious.

It was in 1917 that the shop moved into the location where it is today. The policy of those in charge has always been primarily to serve the public whether it was in recommending approved appliances or in educating people into the use and care of electric equipment. During the past war years of course, there was necessarily an even greater emphasis on service and the service staff of the shop got such a reputation for good work and ingenious repair that they made an average 12,000 calls a year and had jobs coming in from all over the countryside.

At the end of the war it was decided to remodel the shop since the style was the vintage of 1917, and the construction department did most of the work. The

new shop was designed to give better floor space and look roomier. At one end there is a well-designed model kitchen and throughout the shop there is a fine display of equipment. The illumination is particularly effective with concealed lighting in the tops of the high windows, torch lights down the centre of the floor, and both hot and cold cathode lights in the sales section. The general impression is one of brightness and of a well-arranged display.

In October the London Hydro arranged a special "open house" week with the newly-decorated shop as centre of interest. The programme created wide interest and included demonstrations by Edithemmu Muir, home economist of The Hydro-Electric Power Commission of Ontario, and educational films as well as window displays and literature.



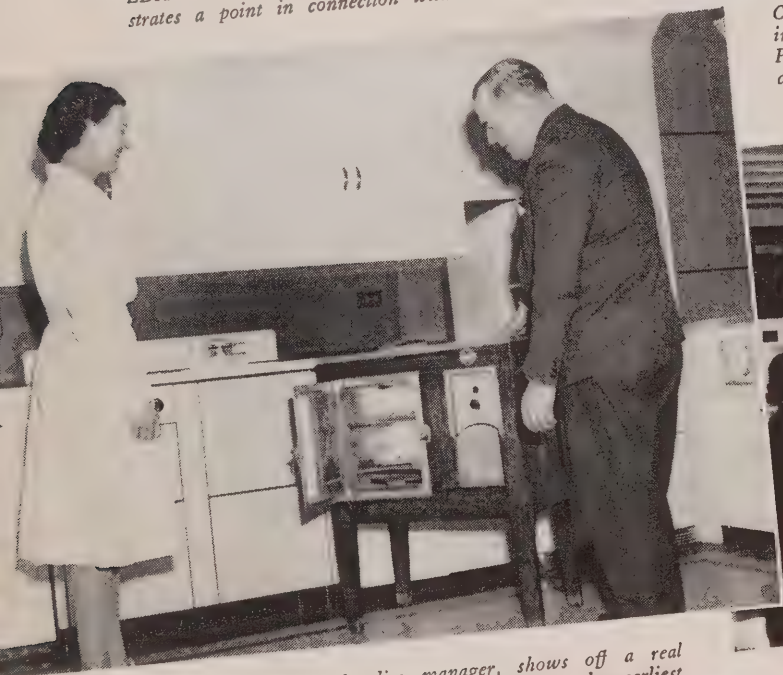
GENERAL VIEW of London's newly red-decorated showroom at the Public Utilities' Commission. Designed to give more room and with well-arranged interior and concealed lighting, it presents an airy, bright appearance. At the far corner is a fine, model kitchen.



EDITHEMMA MUIR, Hydro home economist demonstrates a point in connection with the electric range.



COOKING DEMONSTRATIONS played an important part in London's "open house" week at the showroom at the Public Utilities' Commission. Miss Muir is shown here conducting a demonstration in the up-to-date model kitchen.



F. WILKINSON, merchandise manager, shows off a real "antique", a Copeman electric stove, one of the earliest.



LONDON'S WINDOW display with the Hydro model farm attracted a lot of attention, especially in the evenings when it made an effective picture from the street.



C. C. LINDSAY, in charge of display in the showroom, goes into the finer points of an electric coffee maker with two of London's attractive younger set.

BRANTFORD REALLY ON MAP WITH MODERNIZED OFFICE

By Grace J. Carter,
Hydro News

Reminiscent of a master plan such as one might expect to find at Scotland Yard, the detailed map, which extends over an entire wall in the newly modernized office of the Brantford rural operating area, has to be seen to be fully appreciated.

Hydro News had the unusually interesting experience of studying this map recently when visiting this area to see at first hand why so many tributes were being received about the redecorated and refurnished office and the new fluorescent

lighting. It can be reported that these tributes are well merited, but, first a few observations about the map which, as the staff will tell you, has proved its worth time and again and which is kept clean and intact by removable glass sections.

The map shows the entire Brantford rural district, which is said to be the sixth largest in Ontario, and in which there are 3,087 consumers and 475 miles of Hydro line.

Blocked Out In Colours

Scaled four inches to the mile, congested areas are further broken down into subdivisions which are scaled 200 feet to the inch. The latter are blocked

out in various colours. This map gives such information as primary and secondary lines; transformer locations with size of unit; names of all consumers with contract or account numbers and class, and whether a common or individual transformer is used; primary switches; fuses and the standard red, white and blue phases.

As the name and exact geographical location of every consumer is shown on this map, it is an easy matter when a trouble call or other enquiry is received, to quickly locate the property while speaking to the consumer, either by telephone or in person. The physical conditions of the section in question are check-



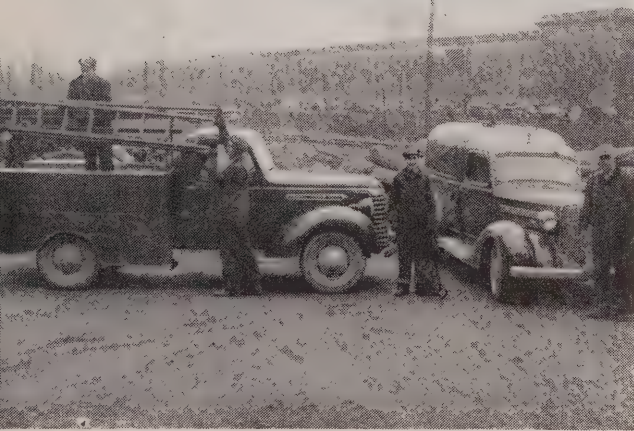
A SECTION of the modernized office of the Brantford rural operating area, which has been redecorated, refurnished and fluorescent lighting has been installed. Walter Aram gives some instructions to Jean Senych, while Jewell Collie and Doris Wright "listen in." These three girls rotate the office duties at three-month intervals. In this way they become familiar and proficient in all phases of the work and can "take over" in any emergency.



STAFF MEMBERS of the Brantford rural operating area are very proud of the detailed map (left) which shows the whole Brantford district and extends over an entire wall in Superintendent S. A. Ord's office. Walter Aram is shown checking the location of a consumer who is 'phoning in a service difficulty. From this map he can quickly obtain such information as the exact location of the consumer, the primary lines, their size, phase colour, switches, fusing, secondary bus and transformers. With this information at his finger tips, he can send a maintenance crew of the required number and suitable material and equipment right to the spot without any waste of time.



A PLACE for everything and everything in its place is the keynote of the Brantford district's storeroom. In this illustration, maintenance men prepare some wire for a job. Ken Stephenson, recently out of the H.E.P.C. Linemen's School, is seen adjusting the weights, while Frank Firth puts the wire on the scales and line foreman J. W. Creamer looks on.



promptly.

Another thing of which the staff are justifiably proud is the redecorated and refurnished office. These bright and airy quarters have the very latest in fluorescent lighting installations, which when necessary, can turn night into day. This office has a high degree of efficiency in all branches of its work, and this includes the up-to-date filing system and tidy stationery cabinets that have all supplies marked and indexed.

The office is supervised by Walter Aram. The three girls in the office rotate their duties at three-month intervals, and in this way they become familiar and proficient in all phases of the work and are thus able to "take over" in any emergency.

Hydro News was particularly impressed with the environment and its friendly atmosphere. Perhaps the reason for this can be summed up in a chance remark made by Mr. Ord, who, in his quiet, pleasant way said: "There are no bosses here."

JUST GETTING ready to "take off." The "trouble shooters" in this picture are, left to right, William Hurley, Neal Postill, D. R. Richter, Albert Barrell, and H. W. Green, assistant foreman.

ed and the maintenance crew, with the required number of men and suitable material and equipment, receive specific directions and proceed right to the spot without any waste of time.

May Use Radio

When heavy storms occur, the consumers usually 'phone in their service difficulties; the "trouble shooters" are immediately contacted on a second telephone, sometimes making it a three-way

conversation, and then the crew are sent speeding on their way to make the necessary repairs. It is hoped that in the not too distant future, radio will be used to contact the maintenance men.

Mr. S. A. Ord has been superintendent of the Brantford R.O.A. for ten years, having been transferred from the Welling R.O.A. in 1934. The map records, which have taken some little time to develop, are kept right up to date and additions and revisions are made

HYDRO PACES PROGRESS AS TRENTON MARCHES ON

**Old Lake Port Has Undergone Metamorphosis And Is Now Centre
Of Many Well-Known Industries**

**By Harry M. Blake,
Hydro News**

Picturesquely situated on the Trent river at its entrance to the Bay of Quinte, Trenton is an old lake port which has lost its original vocations in the shuffle of time, and which has had to decide whether just to drift along in a day-dream of romantic memories or to adjust its way of life to drastically changed conditions. Trenton decided upon a metamorphosis. It has been making a good job of it.

When the lumber industry in Central Ontario began to decline and Trenton was losing its important position as an assembly and shipping port, it was time to take stock of the new situation in which the town was placed.

Modern developments were actually favouring Trenton by improving its strategic position. In this respect, one might say that what it had lost on the water it had more than regained on the land. The two great Canadian railways—there were three at one time—passed through it, and it was located on the principal east-and-west highway of the province from which roads radiated in every direction. This alone, however, was not sufficient to ensure the kind of prosperity that the people of Trenton envisaged for their town. Trunk railways pass through many places, and even where they have established divisional yards, as at Trenton, growth has generally been stabil-

ized within definite limits. Trenton is ambitious—as the most casual conversation with any of its citizens quickly convinces one. It has a very healthy desire to grow and it is anxious to keep on growing. This spirit has been shown in the effective propagandization of its advantages. Industries, it may be assumed, like to settle in a place that is alive and forward-looking. And when they can get Hydro power at low cost that is another powerful incentive.

Purchased System In 1931

Up to March 1, 1916, Trenton was supplied with power by a private company. On that date The Hydro-Electric Power Commission of Ontario took over, exercising local control as well as supplying power until September 1, 1931, when Trenton purchased its system from the Commission. Since then the town has continued as a cost municipality, purchasing power at wholesale rates from the

(Continued on page 14)



TRENTON'S MAIN street forms part of the great highway which runs all the way from Windsor, Ontario, to Quebec city. A fine, modern steel bridge, with a swing section to accommodate shipping, connects the commercial centre of the town, here shown, with the industrial and market garden districts on the east bank of the Trent river.



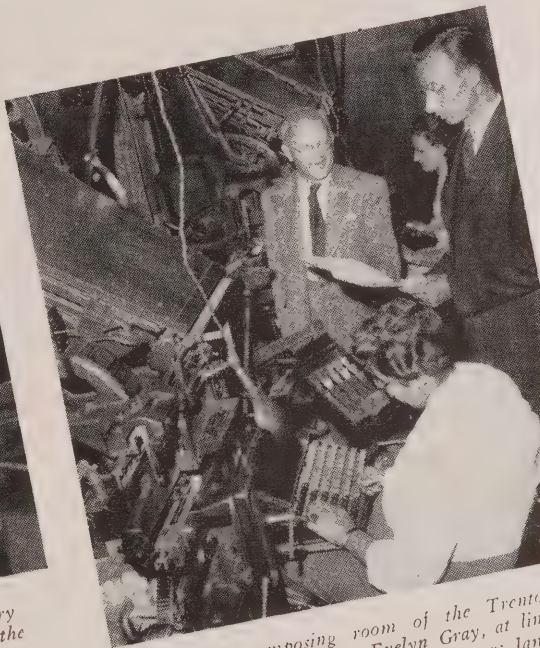
E. R. SMITHRIM, manager of Trenton's Public Utilities Commission, gives some horticultural pointers to Commissioner A. A. Farrar (left) and Chairman J. E. Holmes (right) at No. 1 sub-station.



BACK FROM an inspection of Hydro distribution lines which feed power to 26 thriving industries as well as to increasing numbers of commercial and domestic consumers—W. Brown (left) and C. Bronson, with line foreman N. Campney at door.



HYDRO POWER at the Bata shoe factory not only speeds production but assists the skilled worker at his task.



IN THE composing room of the Trenton Courier-Advocate—Miss Evelyn Gray, at linotype; Ernest Almey, business manager; James H. Ormiston, editor, and Mrs. Lois Simpson.



HYDRO NEWS camera caught this happy family group during the big children's fair at the Trenton air field.

EVENLY DISTRIBUTED Hydro lighting is a feature of the modern dry-goods store conducted by the Couch-Newton Company.



ELECTRICAL CONTROLS are employed at the plant of the Canadian Doughnut Company in the various processes of de-

TRENTON

(Continued from page 12)

Commission and distributing it to its own consumers. There are now 2,300 contracts for electrical services of which 1,980 are in the domestic category.

Local Hydro affairs are administered through a Public Utilities Commission which at present comprises a chairman—J. E. Holmes—and two commissioners—A. A. Farrar and Kenneth Couch. The latter, as mayor of Trenton, is a commissioner ex officio. E. R. Smithrim is the manager and secretary. The commission, in its contacts with industrialists and others contemplating business in the locality, receives well-organized assistance and co-operation from the Trenton Chamber of Commerce.

Many Industries

Excluding the Canadian Pacific and the Canadian National railways, there are now some 26 enterprises in Trenton which can be described as definitely industrial. The town is a centre for the canning industry, and the Continental Can Company, the Stokely-van Camp Cannery and the Crosse and Blackwell Company all have large and well-equipped establishments here. The Central Bridge Company, among its other activities, has kept alive the old Trenton traditions in boat-building. During the war the company constructed tugs and lighters for both the Canadian and the British government, and its slipways form an interesting landmark on the banks of the Trent river.

At Trenton is located a large pole assembly yard, and many of the pine poles used by Hydro on its primary distribution lines, and, in some sections of the province, on its transmission lines, are given impregnation treatment in the adjacent plant of the Canada Creosote Company, which also looks after similar requirements for the Bell Telephone Company and the Canadian National and Canadian Pacific railways.

An Unique Plant

An unique industry at Trenton is the "mixing" plant of the Canadian Doughnut Company. This is not a doughnut bakery—although when you are around, you may find it gastronomically profitable to savour some of the samples from its electric testing machines. It produces the "mixes" or batters which are used in making doughnuts and kindred food products, and processes a flake food ingredient for the fish hatcheries. Preparing the "mixes" entails elaborate processes of dehydration for both the flour and the egg yolk, and G. H. Kartzmark, the assistant-manager for Canada, in conducting Hydro News about the plant, described the many electrical devices that are used in the control of operations.

Other industries and manufactories located in Trenton and contributing to a well-balanced ensemble are Hinde and Dauch Paper Co., Trent Cooperage Co., Trent Cotton Co., Canadian Oil Plant; Trenton Cold Storage; Trenton Coal and Lumber Co., Trent Valley Milling; H. Strong Sash and Door Factory; Trenton Dairies; Central Cold Storage; J. S. Stacey Sash and Door Factory; Allure Lum-

ber Co., Riverside Dairy; Bruce W. Powers and Son, Coal, Grain and Seed; and Trent Dye Works. The silverplate and silverware industries are represented by the Benedict-Procter Manufacturing Company and the Morton-Parker Company. Whole cloth is manufactured at Trenton by Downs Coulter and Company, who are making extensive additions to their plant; while the factories of H. Kaye and Company and William Krangle and Company are engaged in the production of men's attire and clothing. The Trenton Public Utilities Commission supplies all these consumers, as well as many others in the strictly commercial category, with low-cost Hydro light and power.

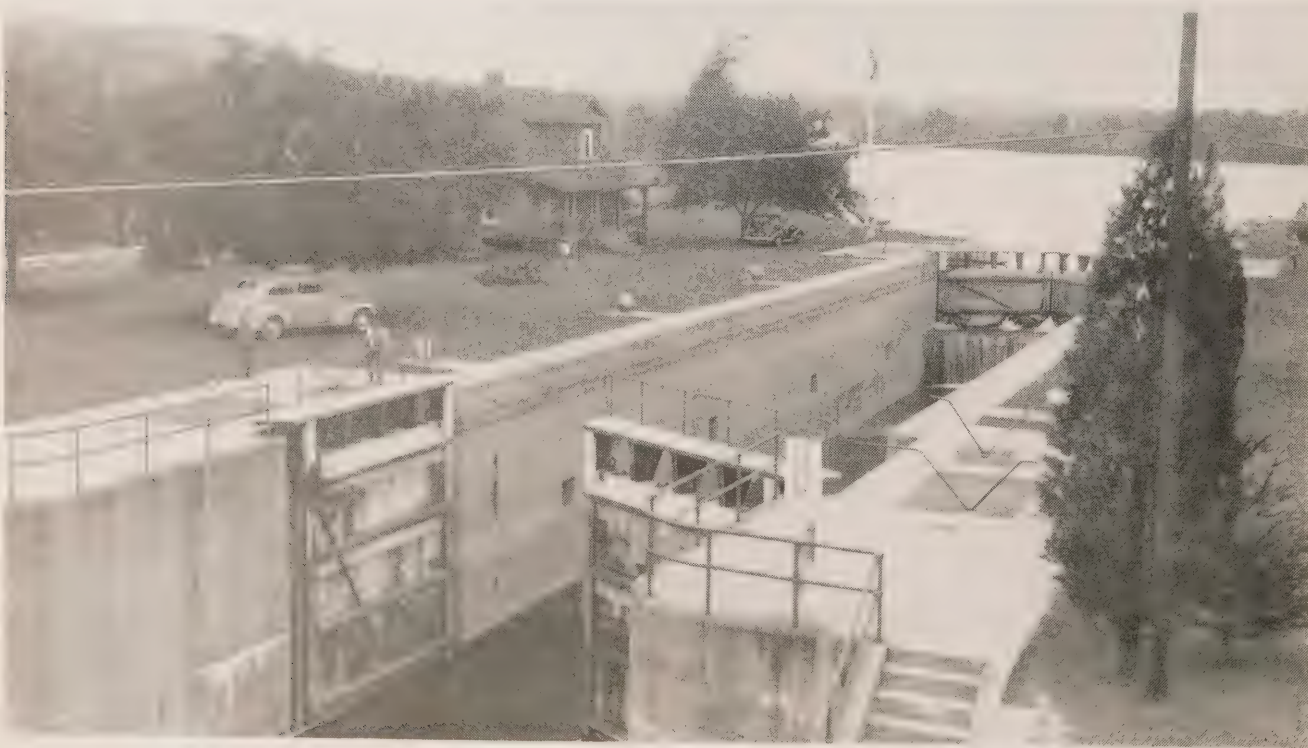
Always An Active Press

Trenton has been the birthplace of many men prominent in Ontario and Dominion politics, and this has inspired an active and fearless press. The first newspaper appeared in 1854, and from 1866 until 1923 there were often two weeklies in the field. It was an era when party politics were taken with a very downright seriousness and political opponents were anathema. Times have changed, and the present *Courier-Advocate*, edited by James H. Ormiston, represents the more modern trends in journalism.

Building Programmes

Trenton is carrying out many public works for the improvement of the town and to provide better living conditions for its citizens. A street-paving programme is under way.

(Continued on page 26)



RICH IN historical associations and a favorite waterway of the fisherman and vacationist, the Trent Canal system extends the Bay of Quinte to Georgian Bay. Looking up-stream from No. 1 lock, the dam of the Sidney power station can just be discerned. There are nine Hydro generating stations on the Trent river, with a total capacity of 57,900 horsepower.



By the Editor and W. Ron Mathieson

Unleashing the full fury of her most devastating forces—sleet, wind, rain and snow—Nature struck a smashing blow at Hydro service throughout the Niagara Peninsula, all along the north of Lake Erie and curved up through Chatham to Windsor.

The toll was heavy. From midnight on December 28 until late afternoon on January 7, it ripped over this area, sheathing trees, towers and transmission lines in tons of ice, whose weight, lashed by freezing gales, toppled 138 steel towers, hundreds of trees and left lines in a twisted mass, bristling with icy daggers.

At first, rural and municipal crews were able to cope with their own individual trouble but, on the third day, conditions became increasingly worse and it was apparent that extra help was needed. When the call went out, repair trucks from both the construction department and unaffected districts, fully equipped with construction materials and necessary tools, proceeded through the storm over treacherous roads to the trouble areas and, within an hour of the "S.O.S.", service had been restored in a number of places.

Battled Day And Night

As Hydro crews battled day and night with one of the toughest assignments they have ever encountered, news came

in of new breaks in service as the wind continued to lash ice-coated trees which, by this time, had been bent over and had become meshed with distribution lines.

Foot patrols had to be organized as the 600-miles of Hydro lines around Simcoe became just a hopeless tangle. Harry C. Fort, superintendent of the rural area, reported on Saturday night, January 4, that ninety per cent of his service had been restored. During the night, a gale which the meteorologist at the Royal Canadian Air Force Station at Aylmer reported as reaching 53 miles an hour, brought down a forest of branches which once more fouled the Hydro lines, and by Sunday morning, only about ten per cent of the power was on.

It was fortunate that crews from Cayuga, Brantford and Orangeville were still in town after a sixteen-hour day and were getting a well-deserved rest, but the cold grey Sunday morning found them out testing circuits and removing ice and branches wherever it was at all possible.

Early in the morning of December 28, the storm struck its first major blow, sending eight miles of steel towers crashing to the ground in the vicinity of Vinemount and Stoney Creek. This cut out a major portion of the 60-cycle power from DeCew which feeds Hamilton. An auxiliary line was thrown up

to carry the cables to a parallel row of towers which had been left standing about two miles away.

Worked Without Rest

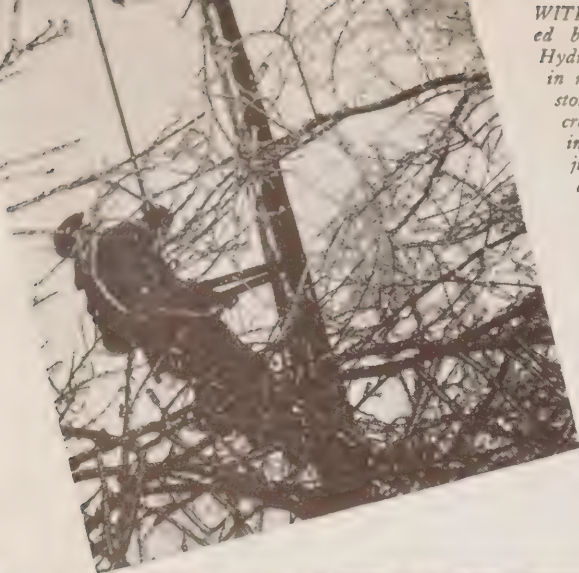
Working in a bitter wind that swept across the Niagara escarpment and blew drifts of snow from the open fields onto roadways, crews worked without rest to bypass the 50-foot steel "hairpin" towers which lay twisted like coat-hangers in the hands of a playful giant.

But repair work was not as easy as it had been planned. On the standing towers which were carrying a double load by now, the sky-wire broke in several places and "shorted," blowing line fuses and crippling the Hamilton areas. Then there was the problem of sinking the emergency poles in land where the topsoil only went to a depth of two feet and then it hit solid rock. It was necessary to use pneumatic drills and blast for each pole that was erected.

Smithville, which was without power for two days, had no sooner had its service restored than the feeder line was cut out when a train, after becoming derailed, toppled sideways and crashed into Hydro poles.

There was a fine response to the appeal made by A. W. Bradt, manager and secretary of the Hamilton Hydro-Electric Commission, to the citizens to cut power

(Continued on page 23)



WITH THE protection afforded by his safety belt, this Hydro lineman did his part in restoring service. In the storm areas where Hydro crews were working during the storm there was just one accident reported and that was of a minor nature.

DID YOU ever see icicles growing upwards? Take a look at they are pointing straight at the sky. When queried concerning phenomenon, engineers offered several explanations, all different. is your theory?



NOT A very pretty sight from a Hydro man's point of view. Here is one of the 138 "hairpin" towers which crashed to the ground disrupting Hamilton service. The towers carried the 66 2/3 cycle power up from DeCew.

THESE MEN are tired. Drawn from the unaffected areas to go Simcoe to work under Harry Fort and T. F. Howlett, they thought the job was finished on the Saturday night, but Sunday morning brought more trouble.

LITTLE WONDER there was trouble with the Hydro Service in and around Simcoe. This picture was taken at 8 a.m. on Sunday morning January 5. Just look at the branches meshed in with the wires.

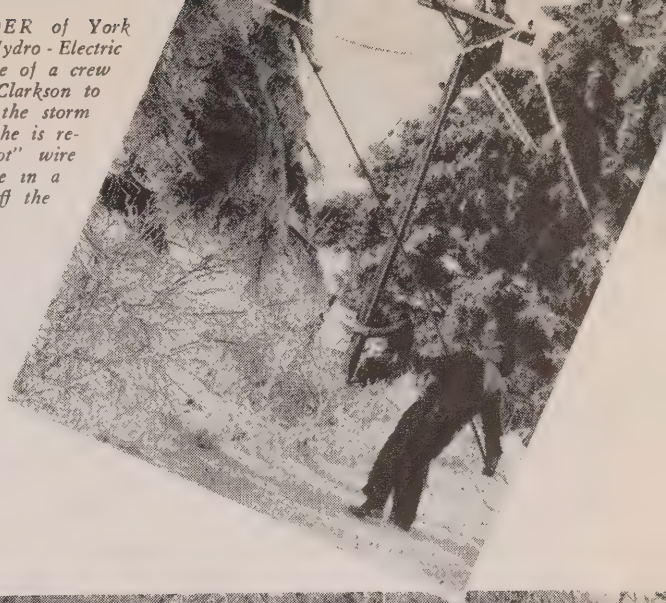


DOWN IN Oakville when the boys from the Heat, Light and Power Commission started to repair service this is an example of the conditions they were up against. In the picture are Harold Farmer, Bert Morcom and Clarence Fish.





BILL LAUDER of York Township Hydro - Electric System was one of a crew who went to Clarkson to help clear up the storm damage. Here he is removing a "hot" wire from a fir tree in a laneway just off the highway.



PICTURE was taken looking right up under the wires at a limb as anchored in the high voltage lines. When two wires are pressed together, "bingo"—off goes the power.



THIS IS one of the patrol trucks from the Brantford Rural area, ready to start out on a cold, gray morning trip. The three stalwarts are Neil Postill, Austin Hurley and David Ford.



R. W. "BOB" SNOWBALL, superintendent of the Oakville Water and Light Commission, preceded the working crew to survey damage and line up the repair work. In this area, in common with the whole of Southern Ontario, falling branches were the cause of most trouble.



LEASIDE WAS not without its own private sleet storm. This shot, taken just over the Don Valley, shows the towers on the Gatineau line in the background. A typical lineman's nightmare decorates the foreground.

NEIL POSTILL of Brantford was testing a fuse on a circuit when the Hydro News Camera was turned on him while he was working in an emergency crew at Simcoe. This was one occasion when Joyce Kilmer's "Trees" was not fully appreciated.





SNOW TURNING TO sleet, and freezing rain, following on the heels of a real prairie blizzard, snarled road and rail traffic, and toppled poles and power lines in many Southern Ontario districts, including Chatham and environs. The weather man explained that moist tropical air flowed over cold air from the West causing the freezing rain along Lake Erie. Amherstburg near Windsor, had a four-hour blackout and Windsor itself took a beating but it was Chatham

where the spectacular happened. Joseph Street (Upper) was glare ice and traffic accidents were light because the going was too treacherous to even take a car out of the garage. The two Hydro Linemen doing a balancing act on top of a transformer were neither training for the ballet nor being foolhardy but just removing "likely to fall" branches. The picture on the left shows Hislop Street before Hydro crews arrived. There was only one pole left standing in the entire block. A close-up of the damage caused to a Van Allen Avenue home is shown (below). The tree that caused the damage was 75 years old and fell at 5 a.m. on the morning of January 3. A visitor at the home at the time of the accident, Stanley Arnold of Windsor, looks as if he is unwilling to leave his post lest the whole veranda crash in on him.

—(Photos courtesy Chatham Daily News)





by **DR. R.W.I. URQUHART MEDICAL DIRECTOR**

WHY GROUP SURVEYS FOR TUBERCULOSIS

In the recent X-ray survey of approximately 1,900 Commission employees in the Toronto area, only a few cases of old healed tuberculosis of the lungs were found and no cases of active disease. This is a most satisfactory finding.

It means that in this fairly large group there are no individuals suffering from this disease. As in all other groups of this size, a certain percentage will have been infected at one time or another with the germ which produces the disease. In all but a few cases the individual resistance has been sufficient to overcome the infection without illness developing, or much evidence being seen in the X-ray film to show that infection had occurred. The few cases of healed tuberculosis referred to above have had more serious infections, leaving scars which can be seen on the X-ray. These individuals have succeeded in overcoming the infection with or without prolonged sanitarium treatment and are now no longer a danger to themselves or to others.

Great White Plague

At one time, tuberculosis was called the great white plague. It was very prevalent in Ontario prior to 1900. In that year there were 3,484 deaths due to this disease. For purposes of record and comparison, it is customary for statisticians to relate deaths from any cause to total population. Thus in 1900 there were 160 deaths from tuberculosis for every 100,000 people in the Province.

From 1900 on, there has been a steady decline in the death rate from this disease.

In response to many requests and with the able and ready co-operation of Dr. R. W. I. Urquhart, Hydro News has introduced this new and important feature. Before succeeding the late Dr. R. E. Gaby as Medical Director of the Commission, Dr. Urquhart was Director of the University of Toronto Health Service and his association with "Varsity" is still maintained by his representation of that body on the Ontario College of Physicians and Surgeons. He is also Custodian of Bunting Records and gives lectures on Pathological Chemistry. Another position which he holds is that of Chairman of the National Committee on First Aid, Swimming and Water Safety for the Canadian Red Cross. A native of Fort Qu'Appelle, Sask., he received his M.A. degree in 1921, his M.B. in 1924 and his M.D. in 1927. During the recent war, he enlisted in 1939 and was posted overseas, holding the rank of Lieut.-Colonel in charge of Medicine, No. 15 General Hospital. As Medical Director of the Commission, Dr. Urquhart will discuss health topics of interest to all Hydro employees and will endeavour to offer timely and helpful suggestions on every-day health rules.—THE EDITOR.

In 1945 in Ontario it reached an all-time low of 25.8 deaths per 100,000 population. This represents 1,033 deaths. Saskatchewan comes next with 26.3 deaths per 100,000. The other Provinces are all much higher, so that the average rate for the whole of Canada is 45.8 deaths per 100,000. While this decrease is gratifying, it must not be forgotten that tuberculosis is still in sixth place as a cause of all deaths. It occupies first place as a cause of death in the 20 to 34 age groups, and second place in the 5 to 19 and 35 to 39 age groups. It is still a major problem.

Decline In Death Rate

The decline in death rate since 1900 has been due to several factors, among which public education, early diagnosis through the use of the X-ray, and sanitarium treatment are the most important. The continued fall throughout Canada, and particularly in Ontario and Saskatchewan, has been due largely to the institution of group chest X-rays similar to the survey of the Commission employees carried out here. The number and scope of such surveys is rapidly increasing and whole communities in this Province are being investigated.

Early detection of the presence of the disease in an individual serves a dual purpose. It removes the unfortunate patient from his surroundings and so prevents him from spreading infection to his family and fellow workers. It permits of early treatment which increases the chances of ultimate recovery in a relatively short time. Late diagnosis usually means infected contacts and recovery only after prolonged treatment, if at all.

Financed By Christmas Seals

It is for these reasons that the Department of Tuberculosis Prevention of the Province of Ontario began these surveys. The surveys in the Toronto area are carried out under the auspices of the National Sanitarium Association and are financed entirely by the sale of Christmas Seals. Surveys in other areas in Ontario are carried out by the Provincial authority. It is hoped that before long, arrangements can be made so that all Commission employees will have an opportunity to obtain a chest X-ray. Do not fail to take advantage of it when it comes.

URGES REGULAR INVESTIGATION OF HYDROLOGICAL CONDITIONS

**Importance Of Regulated Stream-flow To Power Development,
Navigation And Riparian Settlement Emphasized By Dr. O.
Holden, Hydraulic Engineer Of The H.E.P.C., In Briefs
Read At Session Of Ontario Royal Commission On
Forestry — Importance Of Storage Basins
Stressed — Recommendations Made**

Flow conditions in rivers and lakes have a direct and important bearing on power development, navigation and the establishment of riparian settlements and communities, and the influencing factors should receive far more study and investigation than they have hitherto been accorded. This was emphasized by Dr. O. Holden, hydraulic engineer of The Hydro-Electric Power Commission of Ontario, at a session of the Ontario Royal Commission on Forestry held recently in the senate chamber of the University of Toronto.

Dr. Holden had been invited to prepare briefs on the relation of forest cover to stream flow and on the relations of water ways and water power to forest operations and the manufacture of forest products. In the first of these, he pointed out that forest cover was to be considered only as one of the determining factors with regard to the moisture run-off from watersheds. His own opinion was that geologic formation, topography, climate and soil conditions had a great deal to do with regulating the water discharge into rivers and streams and had to be considered carefully in assessing the effects which could be attributed solely to forest growth. Doubtless, too, there were other subordinate factors whose relative importance awaited more systematic investigation. The whole subject of Nature's regulation of stream flow, with its effects upon lake and river levels, was a very complex one and called for organized study rather than conjecture.

American Experiments

Since 1912, Dr. Holden stated, Hydro had carried out systematic stream-flow measurements on rivers where power developments were contemplated. Investigations had, however, naturally been restricted to Hydro objectives. So far as he was aware, there had been no comprehensive scientific investigation of the agencies involved in water run-off in any area of the province. Hydrometric experiments had, however, been conducted in other countries, particularly in the United States, and Dr. Holden drew attention to two of these carried out some

years ago in Colorado and California.

In the Colorado experiment streams with similar physical characteristics and adjacent watersheds were selected and measurements of run-off made over a period of years. Then one watershed was stripped of forest and the other left in timber and the run-off measurements continued. The run-off from the denuded area proved greater at all times of the year than from the forest-covered area. Here, Dr. Holden pointed out, the incidence of a very pervious soil was of great significance. Apparently, this soil acted as a reservoir for precipitation, much of which was intercepted and given off in evaporation by the standing forest in the other area.

Summing up on these experiments, Dr. Holden pointed out that, with widely different conditions, experiments of this type carried out in Ontario would probably have had quite different results.

Forest Cover and Floods

There was no doubt, Dr. Holden said, that forests served to protect lands from erosion, and this was a highly important function. It was also a widely-held opinion that forest cover reduced flood peaks. This view Dr. Holden himself held with respect to normal floods.

"But," said he, "it is at the same time possible that a condition of maximum flow may result from the retention of snow under forest cover until the advent of heavy, warm rains, when the water from the melting snow is added to the immediate precipitation. The conditions on the Madawaska watershed in 1943 indicated such a result. After a winter of unusually heavy snowfall, warm weather in April melted the snow from all the open areas, but on the first day of May there still remained a considerable amount of snow in the forested area. Heavy rains at this time produced an unusually high run-off, which, I believe, was due in large measure to the coincidence of precipitation and melting snow."

On The Mississippi

In further support of the view that forest cover may not always operate as a



DR. OTTO HOLDEN

protection against damaging floods, Dr. Holden took the Royal Commission back 400 years and planted them, without guarantee of safety, on the receding banks of the Mississippi. It was the year 1542. After their leader's death, De Soto's men had stopped to build suitable boats for a descent of the river. But the Mississippi had different ideas, and Dr. Holden tuned in the historian of the expedition for a little belated broadcasting.

"Soon," said De La Vega, "the river began to flow over the fields in an immense flood, and as the land was level, without any hills, there was nothing to stop the inundation. . . . On each side of the river the water extended over 20 leagues of land, and all of this was navigated by canoes, and nothing was seen but the tops of the tallest trees."

Disastrous floods on the Mississippi, Dr. Holden admitted, were not of infrequent occurrence. What he wished to point out was that the immense and overwhelming flood described by De La Vega occurred at a time when forest cover on the Mississippi watershed, although even then relatively scanty, was twice as great as that existing at the present time.

There were little data, Dr. Holden

(Continued on next page)

URGES REGULAR INVESTIGATION

(Continued from previous page)

said, on early floods in Ontario. However, it was well known that floods did occur before any appreciable amount of forest cover had been removed. The highest flood indicated on the Ottawa river, for instance, occurred in 1876 when a greater portion of the watershed was forested than at any time since.

Storage Basins Necessary

As he was not prepared to exaggerate, so, Dr. Holden claimed, he was not prepared to minimize the effect of forest cover on flow conditions in Ontario. Definite conclusions awaited further investigations. At the same time, he did believe that, even in well-forested areas, the most beneficial use of river flow could only be secured by the storage of water in surface reservoirs. There was certainly a marked difference in the relation between the high and low flows and the mean flow on river systems containing considerable lake areas and on those which did not. Where lakes of sufficient size or number did not exist, improvement of flow conditions could be effected only by the creation of artificial storage basins.

Recommendations Made

In concluding his brief, Dr. Holden recommended:

First—that an investigation of the various factors affecting the relation between precipitation and run-off and their relative effects be undertaken on typical areas throughout the province.

Second—that a systematic long-time programme be initiated for the collection of hydrometric data, including ground water storage on streams where remedial or other works or developments may be contemplated.

Third—that suitable authorities be established to exercise supervision over the use and occupancy of river valleys, particularly with regard to low-lying lands subject to over-flow at times of periodic high water.

Fourth—that investigations be made and suitable measures taken to prevent the erosion of forest and other lands by excessive surface flows.

Power For Pulp Mills

In his second brief, after pointing out the importance of Ontario's waterways as avenues of transport for logs, Dr. Holden stressed the fact that an ample supply of power at reasonable rates is a prime requirement in the manufacture of pulp and paper and other forest prod-

CHILD'S DEATH CAUSED BY DEFECTIVE LAMP

DEFECTIVE PARTS in an unapproved electric lamp were responsible for the death of a 3½-year-old child in Toronto on January 5. A socket made of poor materials, and so loose that the metal screw shell of the lamp bulb was in contact with part of the metal frame of the portable lamp, resulted in making the whole iron lamp "alive". The child, having come in from play with wet boots, apparently touched the radiator and at the same time brushed against the live lamp and died of shock almost immediately. Just how this happened is indicated in the photograph showing the lamp. Inspectors of The Hydro-Electric Power Commission of Ontario took the lamp away for examination. Shown in this picture is a member of the inspection department drawing attention to the defective lamp and the proximity of the grounded radiator. This department makes a special plea to householders to use only approved electrical equipment in their homes and at the first sign of any defect to have it repaired immediately by a responsible electrician so that tragic accidents of this kind may be avoided.



ucts. Of the 2¾ million horsepower of turbine capacity installed in Ontario, 430,000 horsepower was used by pulp and paper companies.

"There is estimated to be in Ontario," Dr. Holden concluded, "a potential capacity sufficient to support an installation of some 9,000,000 horsepower. As a large

portion of the capacity still undeveloped is located in the northern part of the province in close proximity to the forest resources, we are assured of ample supplies to meet the requirements of the woods' industries which may be developed to bring into use the glorious heritage that our forests provide for us."



CHAIRMAN HOLMES

This year's chairman of the Trenton Public Utilities Commission, **James E. Holmes**, has been associated as commissioner with the municipal Hydro continuously since 1943. He is a native of Trenton, where he has conducted a retail shoe business for many years. His education, after High School, included business and commercial courses at both Trenton and Rochester, N.Y.

Born in 1886, Mr. Holmes has seen many changes in his native town, and, with the advent of Hydro, its growing importance as an industrial centre. His youth was spent at a time when there was still a great deal of coast-wise shipping on Lake Ontario and when Trenton-built keels were among the most prominent in fresh water. It is natural, therefore, that boating should be his principal off-duty interest and that he should be familiar with all the reaches of the Trent river and the beauty spots of the Bay of Quinte and its adjacent shores. In recent years however, except for a few days now and then in summer, community service activities have taken up practically all his "spare" time.

COMMISSIONER FARRAR

Born in Constantia, New York, in 1884, the son of an American civil war veteran, Albert August Farrar came to Canada as a boy and was educated at Tweed, where for several years afterwards he conducted a combined furniture and undertaking business in accordance with the frequent practice of the day. Later, moving to Trenton, he became prominently associated with Hydro on the local Public Utilities Commission, holding the chairmanship for four out of six years. This year, in retiring from this post in favour of James E. Holmes, he has been persuaded to continue to give his services as a commissioner.

Mr. Farrar has developed an unusual hobby. People of the district who wish to get into touch again with neglected friends and acquaintances of whose whereabouts they are no longer certain

write to Mr. Farrar, and if there is evidence of true contrition, he endeavours to make contact for them with the other parties. As for himself, Mr. Farrar has never lost contact with his old friends and school chums, keeping acquaintance alive and up-to-date with an average epistolary output of a letter a day.

Mr. Farrar has had four sons in the Canadian armed forces.

TRENTON'S NEW MAYOR



Kenneth James Couch, this year's mayor of Trenton and ex-officio commissioner of its Public Utilities Commission, was born in Colborne, Ontario, in 1892, receiving his education in the schools of that town. He has been in business at Trenton for several years and is a partner in the Couch-Newton Company which conducts a dry-goods store and general emporium familiar to travellers in Central Ontario.

Mr. Couch has taken an active part in public affairs. In 1932 he was president of the Trenton Rotary Club. In 1941 and 1942 he sat on the town council. For the three years prior to his election as mayor he was president of the Trenton

Chamber of Commerce.

Trenton, like other towns and cities in Canada, has been suffering from a housing shortage, and Mr. Couch and his associates have contributed by their planning and suggestions to alleviate the situation. It may be taken for granted that the authority of his new office will be exercised beneficially in this direction. Better housing and building, as he puts it, is, in fact, Mr. Couch's principal hobby. He was, however, a hockey and baseball player in his youth, and, when he has any time to spare, he is still an enthusiastic sports fan.

HYDRO MANAGER

Ernest R. Smithrim, manager of the Public Utilities Commission of Trenton, was born at Strathroy, Ontario, in 1884. Receiving his secondary education at Strathroy Collegiate Institute, he proceeded to an electrical engineering course at the School of Practical Science and graduated from the University of Toronto with the degree of B.A.Sc.

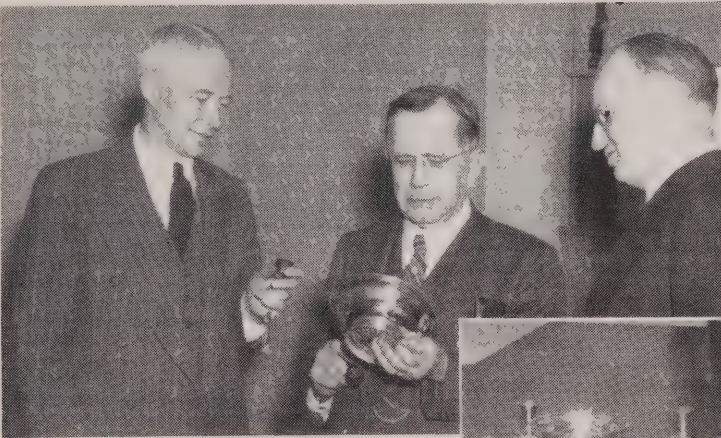
Mr. Smithrim has had a long association with Hydro. He was superintendent of the Public Utilities Commission of Strathroy from 1914 to 1928—years marked by momentous developments of Hydro in the municipal field. When Trenton purchased its municipal Hydro system in 1931, he took over as superintendent there, and from 1932 until the present time his duties have included the supervision of all activities within the administrative scope of the local commission.

Many additions and improvements to the Hydro distribution system in Trenton have been made under Mr. Smithrim's direction, and further development, it is understood, is being planned.

"AT HOME" AT HAMILTON

On Tuesday, **February 18**, the Annual At Home of the Hamilton Hydro-Electric System is to be held in the Royal Connaught Hotel, at 9 p.m. Hydro News has been advised that the following committee has been named to arrange the event: M. Gates, G. Smith, N. Neal, H. Grover, J. Thorpe and W. Vivian.

B. O. SALTER RETIRES: SERVED HYDRO FOR 36 YEARS



ROSES FOR remembrance! That is what Mr. Salter is thinking as he admires the silver rose bowl which was part of the presentation made to him on his retirement. R. L. Hearn (left), chief engineer of design and construction, John Dibblee, chief engineer, operations, and the group gathered at the right have much the same thoughts. Continuing co-operation in spirit—for Mr. Salter will supply the flowers from his own well-kept garden.

ing on University Avenue and attended by representatives of all departments of the Commission, with R. L. Hearn, chief engineer of design and construction, presiding.

On a table reposed a silver rose bowl, with candlesticks and ash-trays to match. There were no long and dreary speeches, but the bright lustre of the gifts seemed to reflect the sterling qualities which had endeared Mr. Salter to his colleagues and to strike a key-note of sincerity for the handshakes and farewells.

Mr. Salter is said to be an amateur gardener, a confirmed smoker and a voluminous reader. It is expected, however, that in spite of temporary power shortages, he will have to use the candlesticks only for ornamental purposes.

which had been damaged and uprooted. R. S. "Smoky" Reynolds, manager and secretary of the Chatham Public Utilities Commission, reported that the city was getting back to normal but nothing so devastating had ever hit them so hard before.

Ice-Laden Trees

Scores of families missed a couple of breakfasts in Oakville early in the storm days when the common trouble of ice-laden trees bent far down to snap power lines or press a couple of wires together and cause an unknown number of line fuses to blow. Apparently ice itself is a non-conductor of electricity, but as soon as it gets a little soft that's when the trouble starts.

Mile after mile along Number 2 Highway from Clarkson to Oakville, Hydro wires were twisted and strewn along the ground. The apex of the storm would appear to have occurred six miles east of the latter district where the highway cuts in fairly close to the lake. It was a dangerous fairyland of ice; black Hydro wires, looking like snakes, and plenty of brush, which had broken from the "lovely" shade trees, were strewn across the highway.

Power did go on twenty four hours after this break and the people of Oakville again were able to have breakfast but a few days later, on January 3, residents went shivering to work in a semi-lighted town only to find that there would be a couple of hours' delay until a hard-fighting Hydro crew could get the industrial areas functioning again.

STORM

(Continued from page 15)

consumption by at least seventy-five per cent. As a result of the citizens' co-operation, further trouble from overloading was avoided.

Down in the misnamed "banana belt," Chatham was maimed with a tail lash of the storm which left generous quantities of snow, followed by a freezing gale, which sent the city's Hydro system right off the beam. The city was without lights and along with this a complete industrial shut-down was caused. Emergency staffs succeeded in restoring main lines except in a few isolated sections of the city where entire rows of poles had to be installed to replace those

Thirty-five years is a long period of service with any organization. When it is associated with Hydro, it carries back to the days when the Commission was just beginning to gird itself for those extensive power developments which were to give it a leading position among the hydro-electric enterprises of the world.

Organization of an efficient purchasing department was essential to the undertakings Hydro planned. This was the job given to B. O. Salter when he joined in 1911. Born in Washington, D.C., in 1876, his engineering training at Schenectady had been followed by years of active employment in the commercial engineering field in the United States, England and Canada. He came to Hydro from the Canadian General Electric Company in Peterboro' with a background of experience which was of great value to him in the new position he had been called upon to fill. At first he had only two assistants with him in the department, which was located, with other Hydro offices, in the old Continental Life Building on Bay Street. Today the personnel employed by the purchasing department, in all its activities, has grown to more than 80.

Mr. Salter's long services as purchasing agent for the Commission were recognized by a presentation ceremony on the occasion of his retirement at the beginning of this year. It was an informal meeting held in the Administration Build-



Living within your income, living according to your actual means, is one of the purposes of a budget. A budget should also make for the creation of a "family mind", an understood standard of living and a definite plan for the future. It should promote better understanding and co-operation between husband and wife, and it should help the children to understand that it is not just "parental cruelty," but the limitations of the family purse which prevent the fulfilment of their every desire. Enquire about a good account book and utilize it to show tangible results.

* * *

Health-wise shoppers buy for food value.

* * *

Save food values and you save food.

* * *

Wrap freshly baked sweet potatoes in a dish towel for about 20 minutes. After this the outer peel will come off easily, leaving a glazed finish and also saving the vitamins close to the skin.

* * *

When roasting pork, make slits in the fat with a knife point and insert four or five tiny strips of garlic.

* * *

To peel hard cooked eggs easily, and to prevent darkening of yolks, crack the shells the minute the eggs are done and place in running cold water for 10 mins.

* * *

Add a small beet to homemade soup while it is cooking and then remove the beet when the soup is done. The soup will be a dark golden colour (not red) and will not taste of beet.

* * *

What a blessing to have canned fruit juices back again! Have you noticed the vastly improved flavour which has been accomplished by intensive research and careful canning to preserve vitamins?

Spicy Oatmeal Cake

3½ cups rolled oats
¾ cups sugar
½ tsp. soda
1½ tps. baking powder
1½ tps. salt
2 tps. cinnamon
½ tsp. nutmeg
1 cup raisins
½ cup chopped nuts
½ cup shortening
1 tsp. vanilla
2 tps. water
4 eggs.

Measure 2¾ cups rolled oats and mix in thoroughly sugar, soda, baking powder and spices. Add raisins and nuts which are dredged with 2 tps. flour. Stir in melted shortening, vanilla, water and beaten eggs. Bake in wax-lined layer cake pans in electric oven at 350 degs. for 25 mins. Serve with cream or cake frosting.

Note: This cake will rise, then slightly settle like a torte. It is flavoured, more crumbly and not quite so light as a flour cake.

To make grapefruit white caps, chill a Number 2 can (2½ cups) unsweetened grapefruit juice; add 2 tps. sugar. Beat 1 egg white until fluffy, add to grapefruit juice and beat until blended. Pour into juice glasses and if desired, top with a dash of nutmeg.

* * *

Some day this winter try my Aunt Jane's old-fashioned succotash—it's made of peas and yellow corn, seasoned with summer savoury.

* * *

Chili con carne from a can makes a "yummy" sauce when strained with canned tomatoes, seasoned with garlic salt and poured over boiled beef.

* * *

I'm going to make mother a Valentine pink and white marble cake, frosted

with seven minute icing, tinted pink and decorated with snowy white shredded coconut.

* * *

Table linen: When party spirit is in the air, gleaming table linen is an essential of hospitality. Even if your tablecloths are well worn by time, you can give them a smart, new look by an easy "sizing" treatment. Just dissolve a quarter cake of a specially prepared wax-like product in each quart of starch. This expert trick will give your linen a crisp, satiny finish and will also insure your iron against sticking and pulling difficulties that cause tears. You can by-pass the chore of sprinkling too, when you use this wax-like product and iron your tablecloths before they are entirely dry.

* * *

The urgent request to save electricity is being regarded as a "must". As you know the critical period is between 8 a.m. and 8 p.m. in the Southern part of Ontario. Here are a few suggestions for operating electrical equipment wisely.

1. Whenever you roast meat, plan an oven meal which can be cooked at the same time.

Cook all vegetables in a small amount of rapidly boiling water. When food is added, cover with a tight fitting lid and turn element from High to Medium or Low. Cook only until tender.

Turn on surface element switches after the kettles have been placed over them—before. Use your pressure cooker whenever you can.

2. Use hot water sparingly when bathing, doing dishes, or laundry (do not use running hot water). Replace worn-out washers on water taps—a tap leaking 60 drops per minute will mean a loss of approximately 175 Imperial gallons of water in 30 days.

3. Do not use decorative lights, grates or bracket lights. Group the family around an adequate light for good vision and turn off unnecessary lamps in the home.

Lighter Lines



"Now, just walk around the corner and tell the policeman you're lost. Then we'll pick you up at the station house after the party!"

An insurance agent was trying to convince a prospective customer of the merits of life insurance. He kept right at him. "Why", he said, "insurance is the greatest thing in the world. No man should be without it. Right now I carry a \$50,000 policy payable to my wife."

"It's too much," said the harassed prospect, "what possible excuse can you give me for living?"



"Wouldn't it have been MORE proper if she had stayed home and let the wolf call on her—instead of meeting him in the woods?"

We have no more right to consume happiness without producing it than to consume wealth without producing it.—George Bernard Shaw.

It is better to be silent and be thought a fool than to speak up and remove all doubt.

A man received a sharp letter from one of his creditors. He wrote back to this firm; "Dear sir: Every month I take all the bills I have and put them on the table, shuffle them and pick out six which I pay. Now if I have any more of your impetunence, why next month you'll be even out of the shuffle."

Nothing spoils a romance so much as a sense of humour in the woman.—Oscar Wilde.

Manuel, a negro, was arraigned before the justice of the peace for assault and battery. "Why did you beat up that other negro, Manuel?" Questioned the judge. "He called me sumpin' jedge." "What did he call you?" "He called me a rhinoceros, sah, a rhinoceros!" "A rhinoceros! When did this happen?" "Bout three years ago, jedge." "Three years ago! Then how did it happen you waited so long to resent it, Manuel?" "Lawd, jedge, I ain't never seen no rhinoceros till dis mawnin'."

Many a live wire would be a dead one except for his connections.—Wilson Mizner.

A man went to California on a vacation. He thought he would have a little fun with a stingy acquaintance of his back in New York so he sent him a telegram collect, which read "Thought you would like to know I'm having a good time and feeling fine. Wish you were here." He had hardly got through laughing at his joke when an expressman delivered a package at his door. The charge was five dollars. He paid for it and with a good deal of speculation began to unwrap it. After he unwound a mile or so of paper and excelsior he came to something. It was a paving block. On it was pasted this note. "This is the weight your kind telegram lifted from my heart."

Our repentance is not so much regret for the ill we have done as fear of the ill that may happen to us in consequence.—La Rochefoucauld.

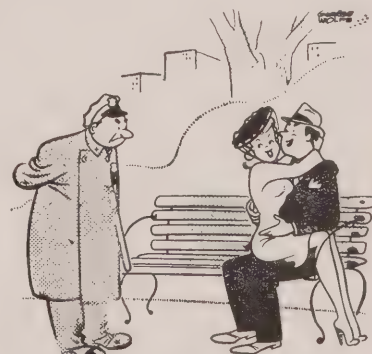


"It seems mighty funny that it suddenly costs \$1.80 for your little brother to go to the movies!"

*A Sultan at odds with his harem,
Thought of a way he could scarem,
He caught him a mouse
Set it loose in the house;
Thus starting the first harem-scarem.*

Success is getting what you want; happiness is wanting what you get.

Margot Asquith tells of an occasion in the House of Lords when their Lordships had been bored to extinction by some copious Peer who, launching a fresh attack, began with the words, "And now, my Lords, I ask myself this question—" At which a young peer said in a loud voice, "And a damned dull answer you'll get, too."



"We didn't want to hog the whole bench!"

BECK IS APPOINTED PURCHASING AGENT



Announcement of the appointment of H. W. Beck as its purchasing agent, succeeding B. O. Salter, who retired at the end of the year, has been made by The Hydro-Electric Power Commission of Ontario.

Mr. Beck has had a long and varied experience with Hydro both in the purchasing and other departments. His first association with the Commission was in 1910 when he was attending Upper Canada College. He spent his school vacation that year and in 1911 with the accounting department. In his summer holidays of 1912, 1913 and 1914 he worked with the hydraulic department and was engaged on the preliminary surveys on the Queenston-Chippawa canal.

At the beginning of the first world war Mr. Beck was continuing his studies at the Royal Military College. He enlisted in the Royal Canadian Horse Artillery, serving as a subaltern overseas. On his return to Canada in 1919, he joined the old railway department of Hydro, which at that time was operating transportation services in Toronto suburban areas as well as in Hamilton, Windsor, Guelph, Peterboro and other cities. As conditions changed, most of these services were abandoned by Hydro, and in 1922 Mr. Beck was transferred to the purchasing department. In 1927, he was appointed assistant purchasing agent, a position which he held continuously until Mr. Salter's retirement.

R. J. WORDEN PASSES

Reil Jarvis (Jack) Worden, superintendent of station maintenance, Niagara Division (western) died at his home in London, Ontario, on December 26, in his 59th year, after several weeks' illness.

Mr. Worden was born in Adams Centre, N.Y., and graduated from the High School at Watertown, N.Y. He joined the Commission's staff in August, 1913. For the last eighteen years he had lived in London.

AWARDS TO HYDRO MEN: AID IN RESUSCITATION

Members of a Hydro crew from the Sutton Rural Operating Area, who played an important part in the resuscitation of seven-year-old Keith Hales who fell into a deep culvert, were recipients of life-saving awards in the Community Hall at Pepperlaw, Ontario, on December 17.

The President's Medal—the resuscitation award of the National Safety Council—was presented to Howard Bodley of Pepperlaw and certificates of assistance were received by the following members of the Hydro crew who relieved Bodley and the doctor: C. E. Carpentier, C. H. Cook, L. C. B. Lee and F. L. C. Smith.

The presentations were made by Willis MacLachlan who represented Ned H. Dearborn, the president of the National Safety Council.

TRENTON

(Continued from page 14)

and the town and Public Utilities Commission are engaged in other extensive programmes. A new Memorial Hospital is being built which will cost in the neighborhood of \$200,000. The building will be furnished with 50 beds and equipped with all the facilities for surgical and medical services. Trenton, with a population now estimated at over 10,000, suffers like other Canadian towns and cities from a housing shortage; but 60 new homes are now under construction, and many more will be built when material is available. There are 12 churches in the town, and excellent primary and secondary schools and fine recreational facilities.

Just east of Trenton is the No. 1 Air Command Headquarters and the Central Flying School of the Royal Canadian Air Force. This station was the scene of great activity during the war when thousands of young men in the air arm were trained for service overseas. From its long war-time association with this great air training centre, Trenton seems almost part of it. And one is apt to leave this town with the perhaps somewhat "pokerish" but certainly not unjustifiable impression that the only ceiling to its future steady growth and development is the big, blue sky.

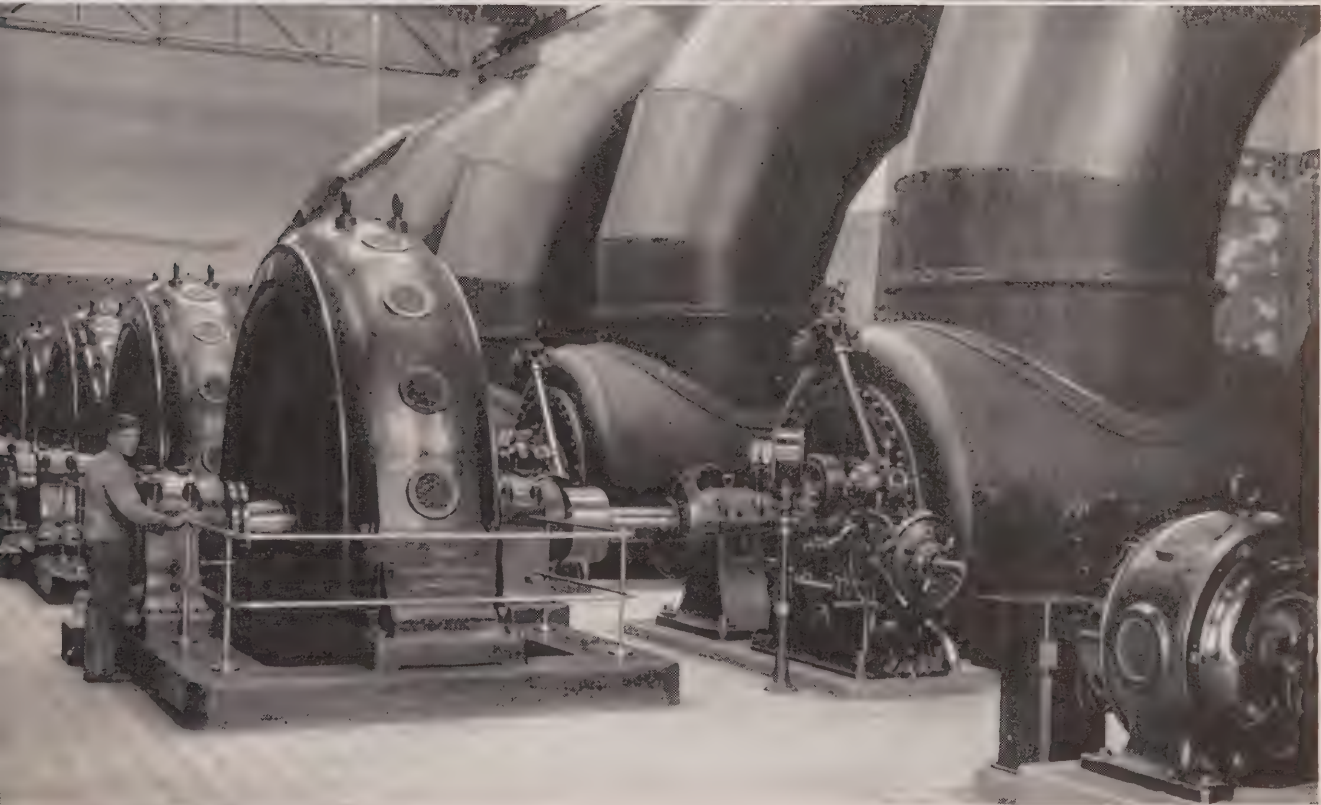
WITH HYDRO 36 YEARS ESTYN ROBERTS FETED



Estyn Roberts, who recently retired after more than thirty-six years on the Commission staff, was guest of honour on December 6 at a luncheon given in the Alexandra Palace by a group of his associates in the hydraulic department and was presented with a silver tray as a token of the high regard in which he is held by his friends.

"Bob" joined the staff in 1909, working at that time on the construction of the transmission system. About a year later he became a member of the hydraulic department working on power surveys on various rivers and later he started on hydrometric work which was expanded greatly about that time to secure a systematic collection of data on the flow of rivers in Ontario. In 1919 the work was transferred to the Dominion Water Power Branch at Ottawa and Mr. Roberts was with this branch until the organization of the work in Ontario was completed and functioning satisfactorily. He then returned to the Hydro and has continued until the present time in the hydraulic department in work closely related to the collection of basic data for power investigation.

Dr. Holden in making the presentation, referred to Mr. Roberts' long and valuable service to the Commission, to his enthusiasm in whatever he undertook and to his personal qualities that have won him many warm friends. Mr. Roberts' thanks, briefly but suitably expressed, was followed by a word of appreciation from Dr. Hogg.



UNTOUCHED BY the ravages of war, these two plants, located in Bavaria, Germany, are still producing hydro-electric power. The upper picture shows the plant known as the Altz Works which is at Burghausen. It has a head of water of 64 meters, develops 48,000 metric horsepower and is rated at 36,000 kilowatts. The lower picture shows the turbine and generator room of Electric Plant Number 2 at Tacherting, which has a fall of water of 18.5 meters producing 11,000 metric horsepower or 7,400 kilowatts. Notice how the turbines are connected by a horizontal shaft to the generator.

#his and #hat

BY THE EDITOR

Over the festive season we experience a feeling of keen chagrin when we discover that we have overlooked one or two people to whom we intended sending Christmas cards. This year was no exception!

On the subject of Christmas cards, we would like to make acknowledgment to the many readers who sent us greetings and whose cards had a special place of honour on our mantelpiece. We regret that circumstances preclude the opportunity and privilege of meeting these delightful folk at this time. As yet, the genius of man has not devised ways and means of extending a warm, friendly handshake through the medium of the printed word. If such magic could be enlisted at this time we would hasten to use it with enthusiasm as we reciprocate the sentiments expressed by our reader friends. If the wishes of these readers are duly fulfilled we are assured of happiness, long life, good health, lots of ginger wine and shortbread, an adequate supply of pipes with bent stems and an unrestricted supply of our favourite imported tobacco. They say the nicest things!

And the Christmas cards themselves—all the cards we received this year—were fascinating creations of artistic skill. We are particularly interested in cards for we have quite a lot of fun as we play what might be called an allegoric game in that we let our imagination run riot and try to project ourself into the setting on the front of each card. It's silly but it's fun! For instance, in one card we found ourself sitting alongside Santa Claus as he urged on his reindeer whose feet seemed to barely touch the chimney tops below. And as the night air made our face tingle we wondered where and when Santa would park his reindeer chariot and how he would squeeze down such narrow chimneys with his bulging bag of toys. We were very much in the air about the whole thing!

Then we turned to another card and found ourself catapulted from Santa's chariot into the depths of an inviting armchair which was occupied by one of man's best friends and, within easy reach, was a bookcase filled with books. We began to feel delightfully drowsy but

we were quickly awakened as we looked at the next card and discovered that, once more, we were flying through space in company with three colourful ducks. We were brought down to earth again to find ourself singing carols with a group of old-time waits, one of whom held an old-fashioned lantern. The next card invited us to a realm which appeared to be too remote even for a flight of fancy; this card portrayed an angelic creature in a setting of soft, fleecy clouds! We have taxed our imagination to the limit, but, in this case, it won't work and so we tried to project the sender into this setting but simply couldn't get anywhere. So we'll give up!

* * *

We have been receiving many enquiries for J. H. Mackay who had to undergo an operation recently. "Mac", who has been with the Commission for more than 25 years and whose outstanding photographs have been featured in Hydro News on many occasions, is now at home where he is under the eye of his capable wife. He would like all his friends to know that he appreciates their enquiries and that he, in turn, is thinking of them. A man who is frequently called the dean of Canadian photographers, Mr. Mackay can rest assured that although he is away from the office at present, the charm of his personality is to be found on every hand through his fine photographs which occupy prominent places in many of the Commission departments.

* * *

The following poem, the author of which is not known, was apparently written by a person who veered a little from the conservative in choice of ties:

THE TIE THAT BLINDS

*Some may long for the smoothing touch
Of lavender, cream and mauve,
But the tie I wear must possess the glare
Of a red-hot kitchen stove.
The books I read and the life I lead
Are sensible, sane and mild,
I like calm hats and I don't wear spats,
But I want my neckties wild.*

*Give me a wild tie, brother,
One with a cosmic urge:
A tie that will swear
And rip and tear
When it sees my old blue serge.*

*O, some will say that a gent's cravat
Should only be seen, not heard,
But I want a tie that will make men cry
And render their vision blurred.*

*I yearn, I long, for a tie so strong
It will take two men to tie it,
If such there be, just show it to me—
Whatever the price, I'll buy it!*

*Give me a wild tie, brother,
One with a lot of sins,
A tie that will blaze
In a hectic gaze,
Down where the vest begins.*

You find humour in the strangest places. Many people, at first, will very naturally raise their eyebrows when we even suggest that there could be any humour associated with a funeral parlour but, just listen . . . this is a true story. It happened at an undertaking parlour in the City of Toronto a number of years ago.

At that time the death occurred of an elderly and highly respected citizen who had been known as a staunch and vigorous temperance advocate. He had never had a drink and he wouldn't permit liquor, in any form, to be brought into his home. Late on the night before the funeral the undertaker and his assistant, who had had an especially strenuous day, decided to have a little drink. The bottle was uncorked and after the drinks had been poured, it was placed on a table near the casket. Just as the two morticians were about to bend their elbows a close friend of the deceased gentleman arrived at the parlour to pay his respects. The glasses were quickly hidden but lo! there stood the bottle of whiskey at the side of the casket! In feverish haste the undertaker reached the bottle just before the visitor had a chance to observe it and, in a flash, he jammed it into the casket, under the head of the deceased man. Everything, in a very literal sense, had been covered up and the visitor left satisfied that his former friend looked "very nice." But that's not the whole story. A rush call came in, the bottle was forgotten and it was not until two days after the funeral that the undertaker suddenly remembered what had happened. Some readers will no doubt, hold the view that the deceased is still in the company of very good spirits!

WILLIAM KRESS DIES



William P. Kress, 67, a member of the Waterloo Public Utilities Commission for the past twelve years, died suddenly last month at his home in Waterloo following a heart attack.

Mr. Kress had been in good health up to the time of his death and had worked as usual at the Waterloo plant of the John Forsyth Company Ltd., where he had been superintendent since 1915. He was in the employ of the firm for 35 years.

Received Acclamation

At a nomination meeting last November Mr. Kress was returned to the P.U.C. office by acclamation for a two-year term. He was a past president of the Waterloo Board of Trade and Waterloo Young Men's Club and he also served for eight years on the Waterloo public school board. He was a member of St. John's Lutheran Church and the church brotherhood and also a member of the Waterloo I.O.O.F.

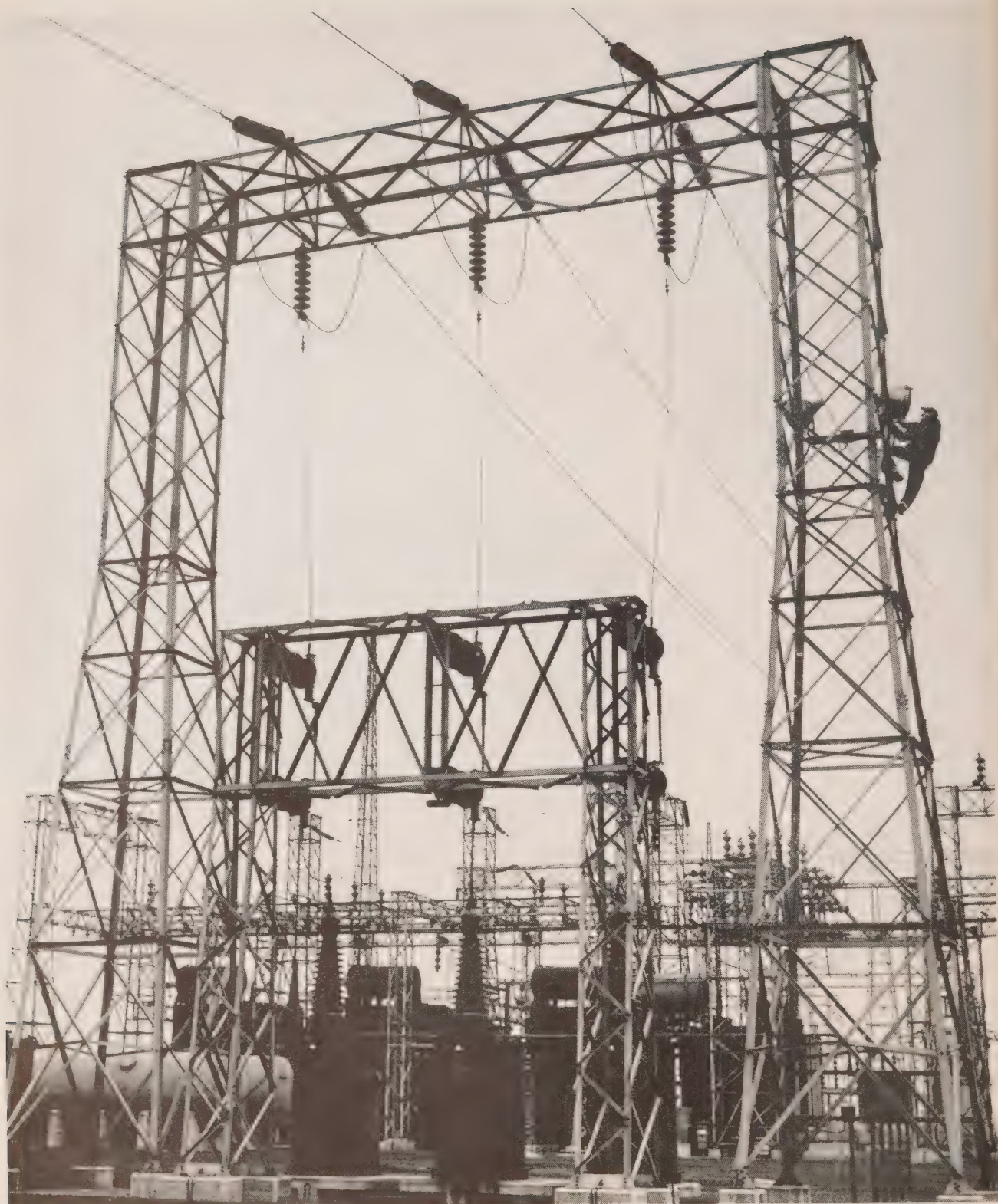
Native of Kitchener

Born in Kitchener in January, 1879, he received his education in local schools. Surviving are his widow and one daughter, Mrs. E. G. Schafer of Waterloo, two brothers, Alfred W. of Lethbridge, and Harold C. of Kitchener, three sisters, Mrs. Edward Dauberger of Detroit, Pauline Kress of Kitchener, and Mrs. Walter Sippel of Ferndale, Mich., and two grandsons.

LONDON STREET LIGHTING EXPERIMENT



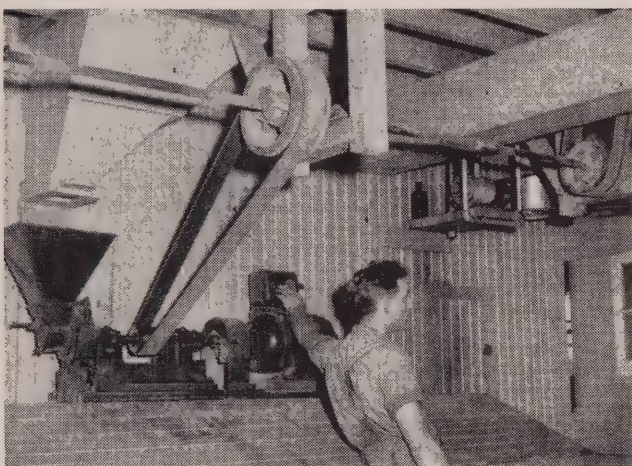
AFTER YEARS of various brown-outs, black-outs, dim-outs and so forth, cities all over the world are now taking special satisfaction in "lighting up" with the newest and brightest that the lighting experts have been able to devise. The fluorescent light, pictured above being installed in the Brompton Road, Knightsbridge, London, is one of many such experiments to see what type of street lighting will be most efficient in minimizing accident rates. Statistics have proved many times how closely the two are related. As well as fluorescent, other types of street lighting include incandescent, sodium and mercury light sources. Each of these types has its own advantages. Many factors are taken into consideration in the new street lighting, width and character of street, density and speed of traffic, required intensity and distribution of light, elimination of glare and so forth. Safety is the chief end in view. Toronto is getting well under way with its million-dollar street-lighting programme and a number of the leading thoroughfares are already enjoying the benefits of the improved lights.



THIS IMPRESSIONISTIC view taken at Hydro's Burlington substation shows the crossover structure between the main power transmission and the 110 kv. switching structures. In the foreground are seen the 110 kv. potential transformers and in the background the main transformers. The substation capacity is three 75,000 kva. transformer banks, which step down the voltage from 230,000 v. to 110,000 volts, and also to 13,000 volts for the synchronous condensers.

Hydro on the Farm

GRAIN GRINDING



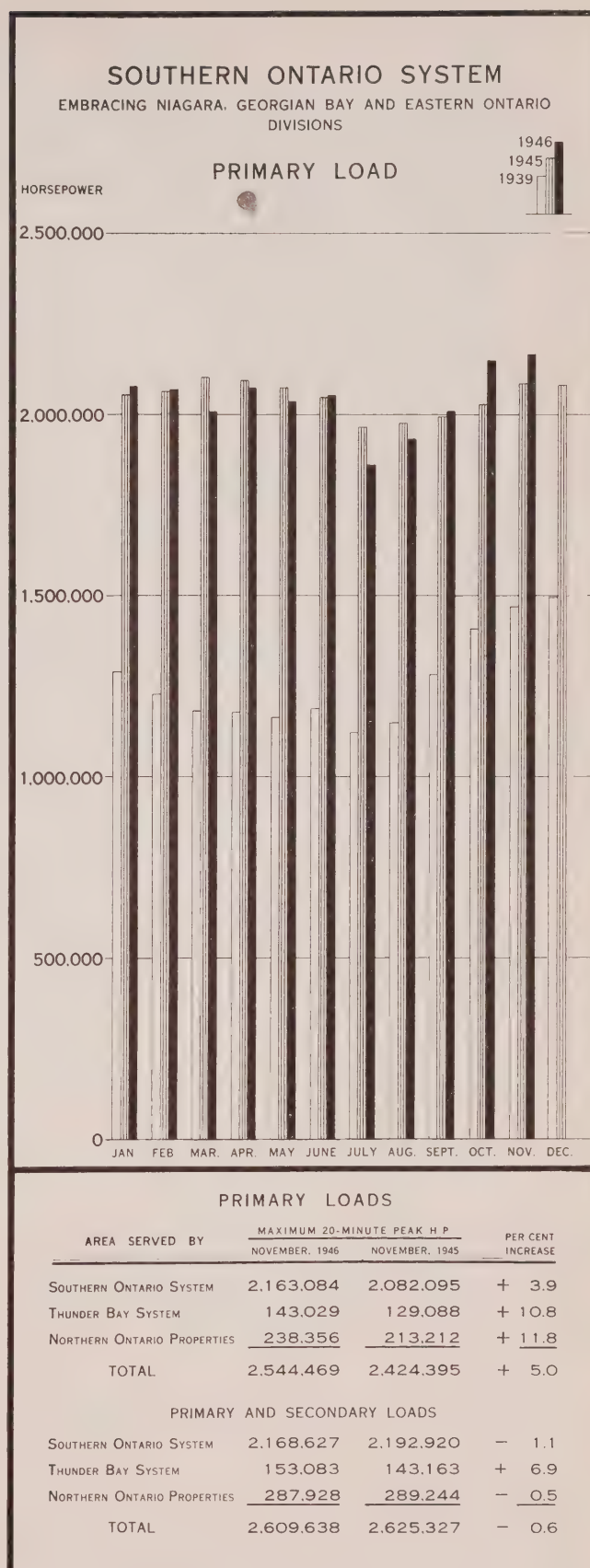
Most families of pioneer stock have a story in their repertoire concerning some ancestor who carried a sack of grain on his back for fifty miles to get it ground. To-day the picture has changed as almost 5,000 Ontario farms have a grain grinder right on their own premises. The electric motors vary from one to five horsepower, depending on their use, and special feed for the livestock can be ground as required. For instance, horses are fed crushed oats, cattle and hogs are given chops made from oats and barley which are usually mixed, and poultry get a mash made from ground corn and other grains.

A survey based on 200 farms using grain grinders, showed that the average grinder "puts through" 1,680 bushels of grain with a yearly saving of \$45.00 and about eighteen working days.

These machines, one of which is illustrated above, are usually set up in the barn on a bin with the feed coming into the chopper by gravity and controlled by simply closing the chute. The grindings can be either bagged or returned to the bin.

The most common chopper plate in use is made from chilled cast iron or alloys and produces a shearing rather than a crushing action and thus turning out a more desirable product.

The plates of these grinders should be protected by a suitable device to remove foreign matter that would crack or chip the plates if it went through with the grain. Magnetic devices as well as good screening in the hopper, provide the desired protection.



HYDRO NEWS INDEX

1946

	ISSUE
A	
A Call At Chesley (Chesley P.U.C.)	September
A Current Topic (Domestic Meters—Toronto H.E.P.C.)	February
A Look At Sunnybrook (Sunnybrook Hospital, D.V.A. at Toronto)	December
A Visit To St. Marys (St. Marys P.U.C.)	September
Atlantic Gateway (St. Lawrence Deep Waterway Project)	December
At The "Royal" (Royal Winter Fair)	December

B

Both Constant And Variable Factors Involved In Financial Forecasting (Address by J. V. Walters at A.M.E.U. Convention at London)	November
Brief States Further Taxing of Hydro Would Not Be In People's Interests (Submission by O.M.E.A. of Brief to Ontario Government)	February

C

Carleton Place (Carleton Place P.U.C.)	December
Caxton Drops In (H.E.P.C. Printing Dept.)	March
Commission Making Close Study of Niagara Frequency Problem (Technical and Economic Questions under review)	January
Critical Power Shortage Demands Strictest Economy By Consumers (Urgent Appeal For Voluntary Co-operation Made by Commission)	December

D

Discuss Many Hydro Problems At District No. 6 Gathering (District No. 6 O.M.E.A. Convention at Kitchener)	November
Down Through The Years (Electrical History—Part One)	March
Down Through The Years (Electrical History—Part Two)	April
Down Through The Years (Electrical History—Part Three)	May
Down Through The Years (Electrical History—Part Four)	June
Down Through The Years (Electrical History—Part Five)	July-August
Down Through The Years (Electrical History—Part Six)	September
Down Through The Years (Electrical History—Part Seven)	October
Down Through The Years (Electrical History—Part Eight)	November
Down Through The Years (Electrical History—Part Nine)	December
Down To Earth (Ploughing Match at Port Albert Airfield)	November
Dr. R. W. I. Urquhart Named Hydro's Medical Director	April
Dutton Impresses Visitor As Place Where Folk "All Pull Together" (Dutton H.E.S.)	July-August

E

Electricity Spells Freedom For Women of Great Britain (Vera Norvick)	November
Engineer's Contribution To Victory Emphasized by Brigadier Campbell (Address by Brigadier C. A. Campbell at annual luncheon of Professional Engineers Association of Ontario)	February
Enterprising Elmira (Elmira P.U.C.)	July-August

F

Fierce Laird Once Held Sway Where Hydro Now Builds Plant (McNab of McNab Township)	September
Frontier Men (Frontier College)	October

G

Getting The Drop on The Saw-Fly (D.D.T. Spray used at Eugenia Falls)	January
Good Street Lighting "Pays Off" In Both Safety And Protection (G. G. Cousins Tells How Good Lighting Pays Dividends)	January

H

Has Longest Service Record Of Any Commission Employee (A. H. McBride)	November
Hydro Meterman Has Troubles—Sometimes Only Fido Is Home (A.M.E.U. Convention at London)	November
Hydro To Build New Plant On Agasabon River Site	January
Hydro Tops T.V.A. Energy Production (Address by Hon. G. H. Chalkies to Association of Ontario Land Surveyors)	April

I

Importance of Adequate Wiring Is Stressed by Hydro Speakers (Talks by M. J. McHenry and J. A. Blay at conference of Ontario Association of Radio and Appliance Dealers)	June
Industrial Unrest May Create Serious Future Power Shortage (District No. 3 O.M.E.A. Convention at Kenora)	October

L

Last Hydro Debenture Retired by Ridgetown (Ridgetown P.U.C.)	January
Light Costumes Of Carrier Crew Helped Planes Make Safe Landing (Address by D. W. Atwater at A.M.E.U. Convention)	April
Load Figures Show Industrial Growth (Address by Dr. Thomas H. Hogg at meeting of Electro-Chemical Society Incorporated at Toronto)	November
Log Cabin Site of 110 Years Ago Becomes Modern Electrified Farm (F. T. Bell, Desmond, Ontario)	July-August

M

Make Plans To Extend Red Seal Programme (Electric Service League)	October
Many Municipalities Establish All-Time Peak In Recent Months (Address by G. F. Drewry at Eastern Ontario O.M.E.A. at Kingston)	October
Many Reports Presented At A.M.E.U. Convention (Adequate Wiring, Working Agreements With Employees of Hydro Municipalities, Standardization And Uniformity of Equipment Among Subjects Discussed)	April
Meaning of Adequate Wiring Stressed At O.M.E.A. Meeting (District No. 4 O.M.E.A. Convention at Mimico)	April
Minister Urges Support For Health Programmes (Address by R. T. Kelly at O.M.E.A. Convention)	November
Mutual Goodwill And Understanding Are Keynotes Of O.M.E.A. Sessions (Address by W. Ross Strike, K.C.)	April

N

Need For Adequate Wiring Emphasized At Convention (Toronto Electric Service League)	April
New Quarters For Kingston R.O.A.	June
No Let-Up In Demand For Power In Ontario (Address by Dr. Thomas H. Hogg at Luncheon of Canadian Manufacturers Association)	May
North Of The Fiftieth Parallel (Hydro In The North Country, Part Two)	January
North Of The Fiftieth Parallel (Hydro In The North Country, Part Three)	February
North Of The Fiftieth Parallel (Hydro In The North Country, Part Four)	March

O

Old Poles Salvaged By Hydro Converted Into Usable Lumber	June
Old Relics Prized Possessions of Two Commission Employees (Old Newspapers)	February
Operation Saw-Fly (D.D.T. used near Sidney Hydro power plant)	December

P

Passport And Identity Pin Returned By General Crerar	February
Patience, Wisdom, Courage Required If Use of "Dynamite" Is To Be Avoided (Address By Percy Philip at O.M.E.A.-A.M.E.U. Convention)	April
Port Credit (Port Credit H.E.S.)	February
Present-Day Problems Discussed By Dr. Hogg (Georgian Bay and Eastern Ontario O.M.E.A. Annual Meetings)	October
Present Situation Critical But Not Altogether Hopeless (District No. 2 O.M.E.A. Convention at Southampton)	October
Push Button Transit (H.E.P.C. Elevators)	April

Q

Questions Are Answered At Hydro Panel Session (Eastern Ontario O.M.E.A. Convention at Kingston)	October
Quite A Bore (Pine Borer)	September

R

Royal City (Guelph Board of Light and Heat Commissioners)	May
---	-----

S

Saluting Smiths Falls (Smiths Falls H.E.S.)	June
See Engineers Playing Essential Role In National And World Rehabilitation (Talks by Dr. Thomas H. Hogg and Hon. C. D. Howe at Gathering of Engineering Societies)	June
Site of War Industry Now Seat of Learning (Ajax Engineering Division of the University of Toronto)	June
Southampton (Southampton P.U.C.)	October
Stress Adequate Wiring In Planning For Future (Record Attained by Electric Service League)	January
Strike Scores Sniping By Opponents of Hydro (Address by W. R. Strike at 35th Anniversary of St. Thomas P.U.C.)	March

T

They Came, Saw And Conquered: Now "Syd" And "Sam" Have Gone (Farewell Dinner to S. A. Quader and Subramania Swayambu)	May
To Adapt Hydro's Facilities To Present And Future Needs (Address by Dr. Thomas H. Hogg at O.M.E.A.-A.M.E.U. Convention)	April
To Present Report In Near Future On Proposed Frequency Change	February
Tornado (Storm at Windsor)	July-August

U

Uxbridge (Uxbridge P.U.C.)	March
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W

When Day Is Done (Street Lighting—Chapter One)	March
When Day Is Done (Some Primitive Light Sources—Chapter Two)	April
When Day Is Done (Story of The Candle—Chapter Three)	May
When Day Is Done (Early Lamps—Chapter Four)	June
When Day Is Done (Greek And Roman Lamps—Chapter Five)	July-August
When Day Is Done (Lighting In China And Japan—Chapter Six)	September
When Day Is Done (The Lamp After The Romans—Chapter Seven)	October
When Day Is Done (Story Of Gas Lighting—Chapter Eight)	November
When Day Is Done (Early Electric Lighting—Chapter Nine)	December
Where 4,000 Meals Are Served Daily (University of Toronto's Division at Ajax)	June
Winning Their Spurs (Hydro Linemen's School)	January

76 Municipalities In Insurance Plan (O.M.E.A. Committee Report)	April
120-Volt Standard Urged By Schwenger (Address by C. E. Schwenger at A.M.E.U. Convention at Toronto)	April



One more can be one too many

Even Hydro cannot *always* find immediate room for one more consumer.

Present demands for Hydro power taxes existing facilities to the utmost. This is due to ever-increasing use of low-cost Hydro service plus necessarily restricted Hydro construction during and since the war. Shortage of materials and equipment makes it impossible to speedily accomplish expansion long since planned.

Lines and transformers now serving any one district can carry just so much power. Wherever that capacity is being completely used by present consumers, addition of new customers could be made only at the expense of service to the old, until new materials for extensions are obtainable. This condition applies in city, town and country. Everything possible is being done to overcome it. New equipment is being installed as fast as it becomes available. Your Hydro Commission trusts and believes you will recognize the facts; and assist, by your patient co-operation, in the orderly restoration of the prompt service that your Hydro always strives to maintain.



In the meantime, let your Hydro know as early as possible of any planned substantial increase in your power needs, and use this low-cost servant wisely.

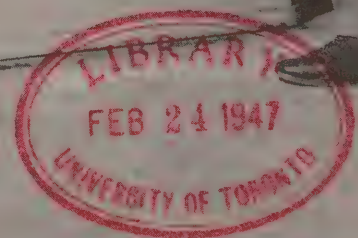


THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

HYDRO *News*



SEARCH IN ACTION





... Right Now, Gentlemen,

We should see about Hydro Power

If you expect to need more Hydro power for a new factory or new additions, you will be wise to discuss your plans with Hydro while they are in the "blueprint" stage. If you neglect this, a costly delay in starting operations may be inevitable.

Even where power lines pass by your site, they may be well loaded already . . . or others may be planning to use more power in the same district. Hydro has to plan, and probably provide additional distribution equipment, in order to supply added blocks of power. This all takes time, especially in these days of uncertain supply conditions.

It is Hydro's genuine desire to co-operate with industry and to serve its power requirements promptly and efficiently. If you will contact your local Hydro well in advance of your anticipated needs, it will be to your advantage and will avoid delay and inconvenience.



THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO



THE HYDRO - ELECTRIC POWER COMMISSION OF ONTARIO

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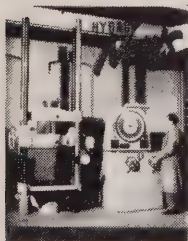
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THE FRONT COVER



ONE of the larger pieces of equipment in the Commission's research laboratories is a strength testing machine of 120,000 pounds capacity, capable of breaking the strongest steel, yet delicate to the point where loads of only a few pounds can be applied and measured with accuracy. This month's cover shows the machine being used in the Hydro laboratory to measure the bond between concrete and steel.

Volume 34

February, 1947

Number 2

CONTENTS

	Page
Ice Bridge At Niagara Falls - - - -	2
Page Three - - - - -	3
Collingwood - - - - -	4
Quarter Century Club - - - - -	7
Proposed Frequency Changeover - - - -	8
District No. 4 O.M.E.A. - - - - -	11
Modern Belt Used By Linemen - - - - -	12
Districts 7 and 8, O.M.E.A. - - - - -	14
Around The Hydro Circuit - - - - -	17
A.M.E.U. Committee - - - - -	18
District No. 6 O.M.E.A. - - - - -	18
The Common Cold - - - - -	19
O.M.E.A.-A.M.E.U. Conventions - - - -	20
Hydro Home Forum - - - - -	21
Lighter Lines - - - - -	22
This And That - - - - -	23
Welland Hydro Christmas Party - - - -	24
Hydro At Work - - - - -	25
Monthly Load Summary - - - - -	25



ICE BRIDGE

At Niagara Falls



IN the summer, the fascination of its onrushing waters, roaring from a great height to the river below, has established Niagara Falls as one of the world's greatest natural spectacles. It presents a spectacle no less majestic when Winter waves its cold, snowy wand to transform "The Falls" into a massive, rugged sculpture of glistening, icy grandeur.

Among the many pictures taken of the ice bridge at Niagara in recent weeks are these two by Charles Stuckey of the Commission's operating department.



* Page Three *

A GRATIFYING RESPONSE

UNDERSTANDING, goodwill and co-operation among organizations, as well as among individuals, can contribute immeasurably to cordial relations and to the mutual benefit and welfare of all concerned.

A demonstration of this fact is to be found in the gratifying response to the Commission's appeal for voluntary saving of electricity during the present power shortage. Following closely on the heels of that appeal, industries, stores, theatres, public organizations and individuals not only busied themselves in effecting economies in the use of electricity on their own premises, but have lent their influence to encourage others to do the same.

This kind of co-operation has been sincerely appreciated by the Commission which, in common with other hydro-electric enterprises throughout the world, has felt the impact of prevailing difficult conditions which are a heritage of the war years.

Unable to embark upon new developments not directly associated with the war effort, Hydro between 1939 and 1945, was unable to follow a planned programme of construction for future needs.

Following the war, the Commission experienced the same problems confronting other organizations and individuals in the matter of obtaining essential materials with which to speed construction of new developments, expansion of existing lines and rehabilitation of existing equipment.

As a result, it was inevitable that with no easing off in the load following the war and a steadily increasing demand for additional power, that a shortage should exist at this time—from December until the beginning of next month.

At such a time, an appreciation of the difficulties on the part of Hydro consumers means a great deal as the Commission seeks to push ahead with its plans to meet present and future demands.

WHAT SICKNESS MEANS

ANNUAL loss in wages to industrial workers in the Dominion because of illness is estimated at \$135,000,000, according to figures given by the Health League of Canada during the recent observance of National Health Week.

These are startling figures. They merit serious attention not only by employers and employees in industry but by citizens in general, since such a loss must have a profoundly disturbing influence

upon the national economy.

With regard to lighting, heating and sanitation, working conditions in factories, shops and even in business premises have been greatly improved during recent years. Clinics and medical services are now provided in nearly every large plant for the convenience of workers. Something, however, must still be lacking, and the Health League would seem to have put a finger on it. It suggests that what is needed is a more definite awareness of the value of good health on the part of the general public.

Public opinion must be informed to be effective. Unless there is a better understanding of the ravages caused by disease and sickness, which spread far beyond the sufferings of the individual victims, they will continue to take an unnecessarily disabling toll in spite of all medical science can do about it.

These were some of the reasons for National Health Week, and they are the very solid grounds upon which the Health League of Canada is endeavouring to build up a strong and representative membership.

O.M.E.A.—A.M.E.U. CONVENTION

DELEGATES representing the Ontario Municipal Electric Association and the Association of Municipal Electrical Utilities, who will meet in Toronto on March 4 and 5, will find the same whole-hearted and cordial welcome as they have received on such occasions in the past.

Over a period of many years, the annual deliberations of these groups have been closely linked with the progress of Hydro in Ontario. From these meetings have emerged many constructive suggestions which have reflected the combined experience and considered judgment of the participating delegates.

While the agenda of Hydro business occupies the best part of two days, these joint gatherings also enable members of the great Hydro family to renew old acquaintance and cement new friendships. It goes without saying that personal contacts are important in the day-to-day operation of any business or public service whose ramifications extend throughout the province.

When men of goodwill get together there are few problems which cannot be discussed and resolved to the mutual benefit of all parties concerned. It may be anticipated, therefore, that the coming sessions of the A.M.E.U. and of the O.M.E.A. will chronicle another progressive chapter in the history of Hydro in Ontario.

COLLINGWOOD

By W. Ronald Mathieson,
Hydro News

When Lord Nelson was killed at the battle of Trafalgar, the second in command of the British Navy, Admiral Collingwood, whose name was later given to an important Ontario town, directed the fleet to victory.

Like "Topsy," the town of Collingwood just grew and skipped the usual stage of being first a village, and was incorporated by act of the Legislature of The United Canadas on January 1, 1855, taking in the territory which was designated as Hen and Chicken Harbour, Hurontario Mills, all of which had been part of the territory known as Nottawasaga.

This rapid growth is not surprising as it happened immediately after the place had been selected as the terminus for the Northern Railway of Canada, which ran all the way up from Toronto. Incidentally, this is said to have been the first Canadian railway in operation

west of Montreal.

During subsequent years of expansion it was only natural that some form of community interest should manifest itself among the residents of the town, with a view to civic betterment. On cedar posts at regular intervals, square coal oil lamps were placed, for the purpose of lighting the streets. This era was short-lived however, as one of the town councillors, Henry Evison, invented a kerosene burner which was accepted as the marvel light of the age. The chances are that the Evison lamp might have been widely used if electricity for lighting had not been introduced about the same time.

Joins Hydro System

With the coming of the electrical age and water-pumping systems, Collingwood pioneered the field with public ownership of these services. It was around 1899 that a few street lights appeared as "magic on main street" and water was on tap in a score of homes.

In the year 1913, the linking of the

local Hydro system with The Hydro-Electric Power Commission of Ontario took place. The load at that time was running around 288 horsepower. As usual, the friendly Hydro tradition of a banquet to mark a ceremony was held, and among those present were George Watson Jr., who was mayor at that time, James Guilfoyle and John Wilson, who were elected commissioners, and E. J. Stapleton, who acted as supervisor until 1936.

As of December last year, the load figures stood at 3,140 horsepower and 25 miles of line were being serviced by the Collingwood Public Utilities Commission which prior to 1920 was known as the Water and Light Commission.

Industrial Activity

In delving into the working statistics of the Collingwood Public Utilities Commission, Hydro News learned that there are 1,680 domestic consumers, 200 commercial and 54 industrial users. The present commission consists of Joseph Bull, Allan McIntosh and Mayor G. J. Kohl.

Collingwood was known as long as a century ago, as a haven for ships in need

(Continued on page 6)



DOWN AT the snack bar in the warm sun, skis are waxed and dried before any fancy work is attempted. The old snack bar in the background was built by the pioneers many years ago and was never intended to provide atmosphere for city folk who come up either by car or on the train "special" to Craigeleith.

SKIERS HAVE their choice of hills in Collingwood. You can take either the tow or sleigh and go up to the top of the mountain or practise on the gentle slopes near the chalet. In this photograph a charming quintette try out the latter course while a couple of "old timers" give words of encouragement.

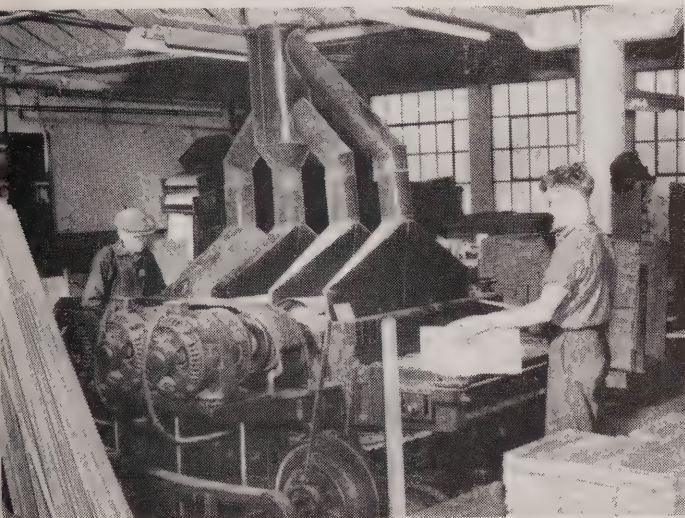




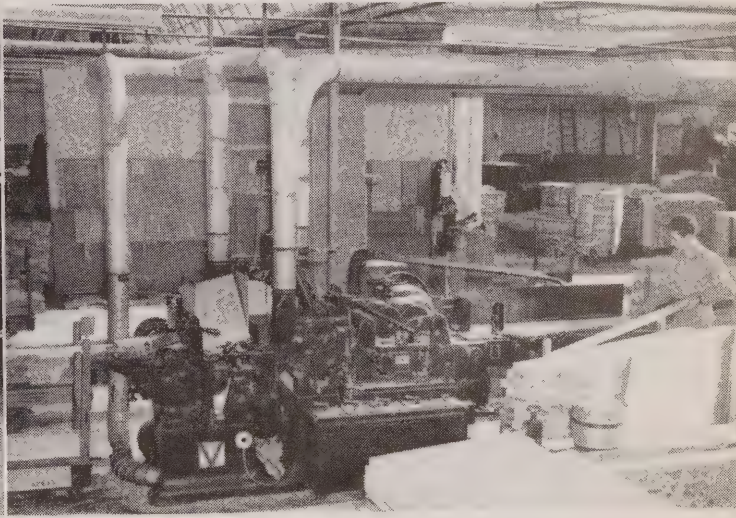
THERE ARE smiles that make you happy. For instance look at these two young ladies, members of the Collingwood Public Utilities Commission staff. They are Isabel Beynon and Margaret Bunting, who looked up from their desks for a moment to chat with Hydro News.



RIGHT ON Hurontario Street, the Dominion Public building which houses the post office, presents an imposing appearance. Most people in town call for their own mail and it is a semi-social event to exchange greetings on the broad front steps.



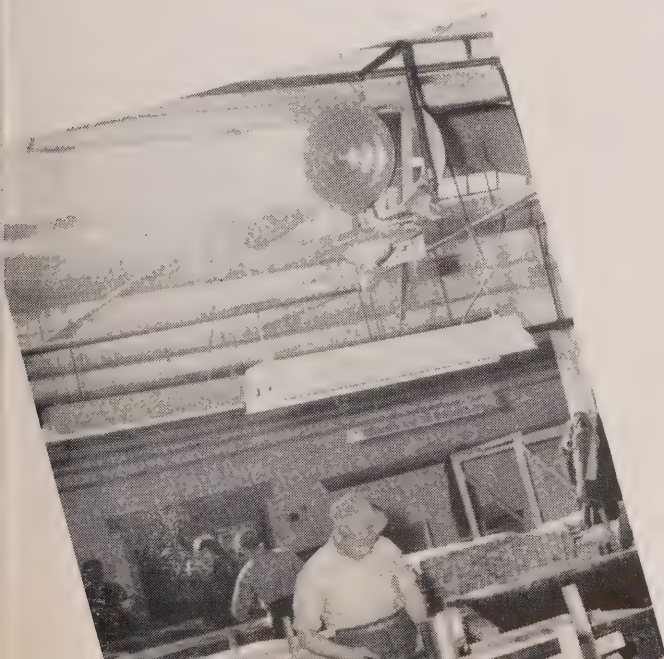
SIX ELECTRIC motors are used in the operation of this "shaper" located in the plant where they make furniture of the knock-down variety, which is assembled after it has been shipped.



HERE IS another handy gadget that many a man would love to have in his workshop! It will do everything but paint the furniture it makes. It is powered by no less than twelve electric motors and weighs several tons.

CHIPPENDALE (left) may have turned out some very fine woodwork but he may not have thought of making his own weather so the wood could be seasoned. The machine (top right) maintains the humidity at 70 per cent.

IN A Sunday afternoon walk down Collingwood's main street Hydro News found a show window which extended down to ground level and which opened from the outside. The display in this window featured some of the first electric lights manufactured and imported from Britain.



COLLINGWOOD

(Continued from page 4)

of repair. Down through the years, shipbuilding flourished in the town, from the construction of early wooden vessels, to the modern steel ships of to-day. Down the ways of the Collingwood Shipbuilding Company Limited, have rolled such examples of the shipbuilder's art as the Royalton and Westmount. The passenger and freight-carrying vessels Harmonic and Huronia are also products of these yards. Collingwood's marine contributions however, have not been confined solely to the flow of inter-lake commerce. During the second World War, it played an outstanding and aggressive role. Corvettes, mine-sweepers and other types of naval craft were produced together with other essential war materials. In addition, during those trying years, the repair yards ministered to the maintenance of lake freighters whose vital cargoes were so necessary to victory.

Now with the return of peace, Collingwood's shipbuilding yards may look forward with confidence to the future. Substantial contracts, both foreign and domestic, as well as the considerable backlog accumulated during the war years, are now keeping the yards busy.

The Baby Industry

They make their own weather at the Globe Plywoods, Limited, the most recent industry to locate in Collingwood. And what is more, they make it to match the humidity of countries to which their products are exported. A jet of water hitting an electric fan blade is the simple principle involved, but multiply this by thousands and you get a fine mist which keeps the lumber at the 70 per cent humidity mark.

The factory makes all types of home and office furniture on an assembly line with all kinds of electric shapers and moulders which, it is stated, speed up production, and at the same time do a more efficient job than can be done by hand methods. The furniture parts are not assembled but shipped to their destination where they are put together, finished and marketed.

The Educational Side

Linked closely with the history of Collingwood is the story of its educational life. The character of the early pioneers is reflected in the fact that, prior to 1858, there were both grammar and public schools which were well attended.

At present, a good teaching staff and excellent facilities show the results of early planning. Another side of Collingwood's educational life centers around the pub-

lic library where regular classes in the fine arts are conducted for the school children.

The library traces its origin back to 1856 when the Mechanics Institute and Library Association was formed. In those days this became a hub of learning and represents one of the first attempts at adult education in the Province.

By 1895 when the Legislature passed the Library Act which made funds available for books, the Mechanics Institute was dissolved and the present system installed.

The Enterprise-Bulletin

For 90 years, the people of Collingwood have been fortunate in having a weekly newspaper. The Enterprise, which was established in 1857, received some friendly opposition when the Bulletin "hit the street" in 1870. However, it was not very long before a union took place and for many years the paper was edited by the late David Williams, well known in the weekly field. His son-in-law R. W. "Dick" Irwin is carrying out the traditions and keeping up the fine standard.

Up in the Blue Mountains that fringe the western outskirts of Collingwood, are perhaps the finest ski trails in Ontario. To this skiers' paradise come enthusiasts from all parts of the country to try their prowess in this most thrilling of winter sports.

Jozo Wilder, the pro instructor, operates the Chalet on behalf of the Toronto Ski Club and Collingwood Blue Mountain Ski Club. Served by the Canadian National Railway, this centre of winter sports attracts an estimated 1,500 devotees every week-end, and the plans for the future of skiing, it is stated, will make Collingwood the mecca of "wood-foot" followers.

Who has not heard of Wasaga Beach? Well, this great, typical Canadian resort is just a few miles away and merchants of Collingwood all do a bumper tourist and holiday business.

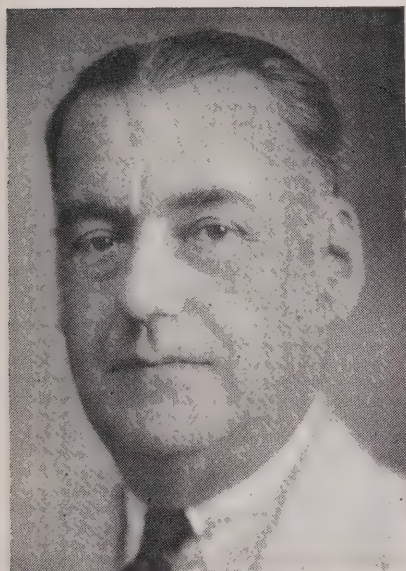
One of the summer visitors' big attractions is the fishing in the waters of Georgian Bay and the Nottawasaga river. Up on the mountain the old gamey speckled trout has many haunts and the assurance for many years' fishing is given by the Provincial Government whose hatchery, located just out of town, keeps the bay and rivers well stocked.

When it comes to hockey, Collingwood has won six championships, and the support given local teams is something of which big league operators might well be envious. And incidentally, the next great community project the town is planning, according to mayor Graydon is the construction of a new arena. It will cost about \$150,000 and will have electric freezing units for artificial ice and the lighting will be of the most modern type. It is one of many undertakings which will further enhance the town's reputation for enterprise and progress.



FRAMED BY a freighter in for repairs at the shipyards, and a grain carrier, which was moored for the winter, the elevators of the Collingwood Terminals Limited look rather bleak with the ice-bound cove in the foreground. Little wonder—the outside temperature was zero.

C. C. FOLGER PASSES



COLLAMER C. FOLGER, general manager of the Kingston Public Utilities Commission, who died in the Kingston General Hospital on December 22, 1946, was actively interested in all matters pertaining to Hydro and his keen vision and sound judgment contributed largely to the present successful position of the Kingston Public Utilities.

He began his career at an early age in the employ of the Electric and Gas Departments under private ownership, but left temporarily to go to Queen's University.

When the plants were taken over by the city of Kingston in 1904, he was joint manager and became manager in 1907. In 1912 when the Electric, Gas and Water departments were amalgamated Mr. Folger was appointed general manager, in which capacity he served until his death. In 1914 the Public Utilities Commission was formed and it was due to his untiring efforts that the city can today point with pride to the excellent standing of its present utilities service.

Mr. Folger was a member of the Association of Professional Engineers of Ontario, the Engineering Institute of Canada, the Canadian section of A.W.W.A., past president of the Canadian Gas Association, Charter Member of the Kingston Chamber of Commerce and the Kingston Kiwanis Club, Past Member of the Ancient St. John's Lodge, No. 3 A.F. and A.M. and past Grand Master of Cataragui Lodge No. 10, I.O.O.F. He was interested in sport and served on the finance committee of the International Hockey Hall of Fame. He was a member of the Cataragui Golf Club and a great boxing enthusiast.

QUARTER CENTURY CLUB TO ADD 53 NEW MEMBERS

Another fifty-three names will be added during 1947 to the membership roll of the Ontario Hydro Quarter Century Club, which will bring the total to approximately 900. The following list was made available to Hydro News by S. L. Eisenhofer, secretary of the club:

LADIES

Name	Department	Location
Biggar, Catharine Ruth	Accounting	Toronto
Grader, Elizabeth Marion	Operating	Toronto
Hamilton, Jacqueline Elizabeth	Elec. Eng.	Toronto
Johnson, Ella Margaret	Hydraulic	Toronto
McMullen, Dorothy Ellen	Construction	Toronto
Vanderburgh, Leila Jean	Accounting	Toronto

MEN

Name	Department	Location
Baker, Walter Colin	Operating	Toronto
Bell, Edgar	Operating	Toronto
Brown, Herbert Leslie	Accounting	Toronto
Campbell, Alexander George	Operating	Niagara Falls
Carr, William Harding	Operating	Toronto
Cheney, Stuart Keith	Emp. Relations	Toronto
Cronin, John	Operating	Norwood
Dillon, Clifford Earl	Operating	Sturgeon Falls
Duncan, Hugh	Operating	Niagara Falls
Dyer, Ernest William	Operating	Niagara Falls
Ewart, Walter Pearson	Operating	Niagara Falls
Faichney, Benjamin	Municipal Audit	Toronto
Foreman, George Maurice	Operating	Niagara Falls
Free, George Henry	Operating	Seymour
Haylor, William David	Operating	Queenston
Heath, William Ross	Elec. Eng.	Toronto
Hughes, Raymond Earl	Municipal	London
Johnston, Stanley Hastings	Printing	Toronto
Kane, John	Construction	Toronto
Krupp, Gordon John	Operating	Kitchener
Lapere, Alexander Reid	Operating	Niagara Falls
Laurie, Russell McLeod	Operating	Toronto
McCann, John Joseph	Operating	Niagara Falls
McCall, Lorne Johns	Operating	Wauhaushene
McLean, James Kay	Municipal	Toronto
Miller, Leonard Joseph	Operating	Chippawa
Mowatt, William	Operating	Fraserdale
Nightingale, Herbert Harold	Operating	Niagara Falls
Oldfield, Collin Thomas	Operating	Niagara Falls
Orr, James	Operating	Niagara Falls
Pringle, James	Operating	Niagara Falls
Richardson, Clephane William	Municipal	Toronto
Ross, George Diamond	Elec. Inspection	Ottawa
Rymes, Charles Ernest	Operating	Port Arthur
Stanley, Ernest Elkington	Operating	Cameron Falls
Smith, George Frederick	Operating	Niagara Falls
Standing, Robert Oswald	Operating	Toronto
Stewart, Calvin James	Operating	Niagara Falls
Sward, Gustav	Operating	Niagara Falls
Thompson, Archibald Donald	Research & Test.	Toronto
Thomson, Edward Lionel	Accounting	Toronto
Timmerman, Edward Earl	Operating	Belleville
Vasiloff, George	Operating	Stamford Centre
Watkinson, James Henry	Operating	Niagara Falls
Watson, Lawrence Everett	Operating	Niagara Falls
Whittaker, Harold	Operating	Toronto
Wilson, Roy Alvin	Operating	Hamilton

STRESS WORLD-WIDE TREND TOWARDS STANDARDIZATION

**No Good Reason Why Ontario Should Be Excluded From Benefits of 60-cycle Frequency, Says
W. Ross Strike, K.C.,—All Phases of Proposed Conversion Discussed At District
No. 6 O.M.E.A. Meeting**

Supporting with data and statistics the opinion that, both from a technical and financial point of view, the time was opportune to make the change if it were ever to be effected, representatives of The Hydro-Electric Power Commission of Ontario have been addressing group meetings during the past few weeks on the proposed frequency conversion. Recent occasions for this presentation were afforded by the joint annual meeting of Districts 7 and 8, O.M.E.A., at Woodstock on January 15, by special meetings of District No. 5 at Hamilton on January 22 and of District No. 6 at Stratford on January 29, and by the annual meeting of District No. 4 at Mimico on February 4.

By the time the H.E.P.C. representatives got around to Stratford many questions had been put by the municipalities. These had obviously cleared the way for a more precise statement of the case for conversion. Every phase of the subject was covered at first instance in a manner to anticipate further interrogation and to leave little room for misunderstanding.

When, after the luncheon recess at Stratford, the chairman, G. W. Gordon of Kitchener, handed over the conduct of proceedings to W. Ross Strike, K.C., the Hydro commissioner drew a revealing picture of the world-wide trend towards standardization in the electrical field. He pointed out that the adoption of any particular frequency was relatively unimportant. What really mattered was uniformity. Since an overwhelming majority of electrical consumers in North America were now serviced with 60-cycle power, there would seem to be no good reason why a section of Ontario should continue to exclude itself from the benefits that standardization at this frequency made possible—providing, of course, that such a changeover was practical and could be carried out on a sound, economical basis.

Decision Necessary Now

Electricity, Mr. Strike reminded his audience, was the vital force behind production on this continent. Everywhere the electrical industry was looking for-

ward to an era of expansion based on the use of 60 cycle power. The interim report of the Commission had suggested how this frequency could be made available in Southern Ontario, and, so far as could be judged, the present fortunate financial position of both the Commission and its associated municipalities offered an opportunity that might never occur again of carrying out the proposed change with the minimum of inconvenience to all concerned.

One of the chief factors which made an immediate decision on frequency standardization so necessary was the new development necessitated by the growth of power loads on the Commission's Southern System. In stressing this point, R. L. Hearn, chief engineer of design and construction, gave figures to show the load increases during recent years. The primary December peak for 1938 was 1,030,000 kilowatts. For 1946 it was 1,580,000 kilowatts—and Mr. Hearn pointed out that, if the Commission had not been under the necessity of making load reductions, the December peak for 1946 would have been 1,830,000 kilowatts, an increase of 78 percent.

An even more striking illustration of load growth was furnished in the figures for particular areas. In the district west of Hamilton and Burlington the 1938 December peak was 200,000 kilowatts. In December, 1946, the peak, including losses, was 395,000 kilowatts, an increase of practically 100 percent. In the Eastern Ontario and Georgian Bay divisions the combined December peaks increased from 125,000 kilowatts in 1938 to 255,000 kilowatts in 1946, representing an increase of 104 percent.

Increasing Capacity

The Commission's total dependable generating capacity in the Southern System at the present time was calculated, Mr. Hearn stated, at 1,575,000 kilowatts. The new generating plants at present under construction at DeCew Falls, Stewartville and Des Joachims, and coming into service in the order named, would, he intimated, bring this capacity up to 1,960,000 kilowatts by the latter part of 1950 or early in 1951.

In order to make this new generating capacity available to the municipalities, additional transmission lines and transformer stations would have to be constructed. In this connection the Commission had already approved of a 220,000-volt transmission line from Stewartville to Oshawa—to be operated originally at 110,000 volts—and of two or three 220,000-volt lines from Des Joachims to Kipling Avenue and Burlington substations. Authorization had also been given for the construction of a line from Allanburg, near Niagara Falls, to a new terminal substation at Westminster, near London, which the Commission hoped to put into service at 115,000 volts in the fall of 1948, with a capacity of 100,000 kilowatts. A 220,000-volt transmission line was also to be constructed from Masson to Burlington substation, together with a 75,000 kva bank of step-down transformers and a 40,000 kva. voltage-regulating synchronous condenser. The power developments and the associated construction referred to would, Mr. Hearn stated, cost in excess of \$100,000,000.

Uniform Frequency Best

With all this new development going on, or under contemplation, the importance of a decision on frequency standardization from the point of view of future installation and construction was heavily underlined. And Mr. Hearn proceeded to show how the adoption of a uniform frequency would facilitate the operation of the grid system which the Commission was developing in Ontario. It would, he said, allow the free interchange of power between the Commission's own systems and also permit of interchange with the large systems in Quebec and the United States, thus facilitating the transfer of large blocks of power as they might, from time to time, be required. It followed that the amount of generation necessarily held in reserve for emergency use would be reduced to a minimum. It would eliminate the necessity of using frequency changers to tie systems together—a method which, Mr. Hearn pointed out, was attended by added costs and power losses as well as by vicissitudes of operation. Finally a uniform frequency would tend to improve services over those possible under the dual fre-

quency system by permitting the more efficient operation of generating stations and the most effective use of water storage and resources.

"Our engineers," said Mr. Hearn, "have compared the relative costs of delivering 25-cycle or alternately 60-cycle power from new generating sources such as the Ottawa river. They found that it was possible to deliver 60-cycle power at practically the same cost as 25-cycle power. It is true that 60-cycle power requires additional transmission line capacity. But this additional transmission cost is offset by two factors—the lower cost of transformation at 60 cycles and the savings in transmission losses for systems of equal capacity."

In view of what had been written about the changes which might be effected through the new discoveries in electronics, the Commission's engineers, as a safeguard to consumers, had visited the research laboratories of both the General Electric Company and the Westinghouse Electric and Manufacturing Company and discussed with the research engineers themselves the problems associated with conversion as well as those affecting generation and transmission and the use of electric power in industry and in the home. After close examination of all factors, the consensus of opinion was that no new principle had been disclosed which would affect or make obsolete the long-established types of equipment now in use.

Changes that would have to be effected by the municipalities if the proposed frequency standardization were carried out were described by R. T. Jeffery, chief engineer in charge of municipal affairs.

The Commission, Mr. Jeffery explained, had based its estimates of the cost of conversion on average figures for the whole period of changeover. Liberal but not exaggerated allowance had been made for the present trend towards increased prices for equipment and material, so that, while keeping close to the mark, the actual costs were likely to be lower rather than higher than the estimates.

Where substations were owned by the municipalities, Mr. Jeffery explained, the local commissions would be called upon to carry out the necessary transformer adjustments. This would involve, in some cases, new installations and, in others, the re-winding or re-modelling of existing transformer equipment.

A transformer converted for 60-cycle operation, Mr. Jeffery pointed out, would have a capacity of 150 per cent of its present 25-cycle rating and would represent about 50 per cent of the cost of new 60-cycle replacing equipment.

As far as meters were concerned, the cost per unit to convert to 60 cycle in the case of domestic and commercial consumers was estimated at \$8.75. For power consumers the cost would be approximately \$25.00 per meter. The cost of putting in new circuits and new feeder circuits had, Mr. Jeffery indicated, been included in the estimate of municipal expenditures.

"At no time in their history," said Mr. Jeffery, "have the municipalities in Southern Ontario been in a better financial position to meet the costs involved in conversion. At the present time, the Hydro municipalities have in their reserves from 25 to 50 percent of the cost of their distribution systems."

During the question period at the Mimico meeting on February 4, Mr. Jeffery's attention was drawn to the fact that all municipalities were not equally provided with reserve funds to carry out the obligations that would devolve upon them through the carrying out of the frequency conversion plan. It was suggested by one delegate of District No. 4 that the reserves of all the municipalities affected should be pooled and a redistribution of reserves made on the basis of the cost of the undertaking in each municipality.

Mr. Jeffery said that since the changeover could not be started immediately—and in many cases municipalities would have a lengthy period of years before the actual changeover—they would have an opportunity of accumulating an additional surplus in these intervening years to assist in financing the cost.

With regard to a few municipalities where the rates to consumers were described as being now so exceedingly low that it was impossible to anticipate any accumulation of reserves in the future, Mr. Jeffery said that he was not in a position to make any statement at the present time. He thought, however, that it was quite possible that a revision of consumer rates, in these cases, might be made so as to fit them in with the general level of rate stabilization proposed by the Commission.

At previous meetings, M. J. McHenry, the Commission's director of promotion, had enumerated the benefits which would accrue to the domestic consumer through the adoption of a standardized frequency.

(Continued on page 11)



OVERCOATS WERE standard equipment for district No. 5, of the O.M.E.A., when they convened in Hamilton on January 22. The heating system in the hotel didn't get into operation for the first two hours. You may recognize, Richard Thomson, Paris; Stanley E. Thompson, Niagara Falls; Albert Jennings, East York; James Wickian, also of East York; R. E. Law, George Austin, Dundas; Roy Pierson of Brantford Township; and many others.



MAYOR SAM Lawrence of Hamilton, (circle) welcomes the delegates of the O.M.E.A. to the "Ambitious City." By using charts John V. Walters, H.E.P.C. treasurer, (bottom left) illustrates financial trends and explains how the changeover costs could be met. Shirley Kates, (bottom right) an efficient hat check lassie, takes Charlie Hutton's togs, while F. Pownall and H. Bush of Mimico look on.



HERE IS the panel of Commission engineers (top left) who have been attending recent meetings of the O.M.E.A. to answer questions and explain the proposed frequency changeover. From left to right they are, M. J. McHenry, director of promotion; R. T. Jeffery, chief engineer in charge of municipal affairs; John V. Walters, treasurer; and R. L. "Dick" Hearn, chief engineer in charge of construction and design. Down in the audience, Dr. W. H. McMillan, W. R. Catton and H. D. "Doc" Rothwell were huddling close to the rad to keep warm.



WORLD-WIDE TREND

(Continued from page 9)

This, he had pointed out, meant a lower-priced and more readily accessible market for electric equipment and appliances and an opportunity to enjoy all the latest devices as soon as they appeared. On this occasion he emphasized the mutual advantages to be derived by the municipalities and the industries located within their boundaries.

The use of 60-cycle distribution would, he suggested, enable municipalities to attract industries more readily from other countries where 60-cycle power was now standard. Most industries using light, high-speed motors, he pointed out, had a decided preference for 60-cycle power. Some had developed special machinery with built-in 60-cycle motors and had, of necessity, either to locate in 60-cycle territory or to install frequency changers. Sixty-cycle motors were smaller, lighter and generally cheaper than 25-cycle motors and motor applications were more readily made, due to wider choice of speeds. They were considered better for all high speed applications. An important point to remember, Mr. McHenry said, was that modern machine tools were generally designed for 60-cycle power. Industries coming into 25-cycle areas from 60-cycle areas might often be under the necessity of changing their entire equipment.

As far as industrial consumers now located in 25-cycle areas were concerned, the changeover, Mr. McHenry repeated, would be made on an equitable basis. It had been estimated that, in some cases it would be possible to rewind motors designed for the old frequency. The Commission would, however, appraise the life value of existing equipment, and this would be given due consideration when it was replaced by 60-cycle installations. Heavy industries in the Niagara area which found it more practical or economical to remain on 25-cycle power, would be serviced through generating units reserved for the purpose.

With the ultimate standardization at 60 cycles, Mr. McHenry pointed out, the cost of distribution equipment to municipalities and the cost of motors and appliances to consumers should be lowered. Before the war the present 25-cycle area comprised 40 percent of the Canadian market for electrical equipment and, if converted, the market for 60-cycle goods would be greatly increased, thus lowering costs.

"With a standardization of frequency," Mr. McHenry said, "domestic, commercial and industrial consumers, in moving from one district to another, will no longer be put to the inconvenience or expense of having their equipment changed to suit a change in frequency."

WOULD ELECT OWN MEMBERS TO ONTARIO COMMISSION

Resolution Passed By District No. 4, O.M.E.A. Asks That Power Commission Act Be Amended

With one dissenting vote, a resolution bearing on the future composition of The Hydro-Electric Power Commission was passed by District No. 4 of the Ontario Municipal Electric Association at its annual meeting in Mimico on February 4, John Irwin of Brampton presiding at the opening.

The resolution, moved by J. S. Beck, mayor of Brampton, and seconded by J. W. Davis, reeve of Toronto Township and warden of Peel County, follows:—

"That this Association requests the Ontario Government to amend the Ontario Hydro Power Commission act to

provide that one member of the Ontario Hydro-Electric Power Commission be elected by the Hydro municipalities through their Association, and, if the Commission is increased to five members, that two of the members be elected in like manner, and that the member or members so elected shall hold office during the pleasure of this Association."

Before the representatives of the H.E.P.C. who had come to explain the frequency conversion plan (elsewhere reported in Hydro News) were introduced, routine business was transacted and officers for the following year elected. They are: president, J. G. Reid, Port Credit; vice-president, Elmer Wright, Toronto Township; secretary-treasurer, Albert Jennings, East York; directors, P. Dale, Brampton, Arthur Leslie, Scarboro, and F. Pownell, Mimico.

Modern 60-cycle lighting equipment, Mr. McHenry stressed as being more economical for factory, office, commercial and home use, particularly in the newer developments of fluorescent and other gaseous discharge type lamps. The same was true of the newer developments in radio, in the industrial applications involving electronics and in a wide variety of new control devices.

How the financing of the frequency conversion plan would be carried out and how the distribution of cost would be made as equitable and convenient as possible for all contributing parties was explained by J. V. Walters, treasurer of the H.E.P.C.

The estimated cost, aggregating \$195,312,000, was made up as follows: Municipally-owned distribution, \$35,300,000; changeover of consumer equipment, \$108,200,000; Provincial Hydro generating and transmission equipment, \$47,412,000; rural distribution, \$4,400,000.

"To prevent interest charges increasing the costs," said Mr. Walters, "it is proposed not to issue bonds specifically for the changeover, but to adopt what may be termed a pay-as-you-go plan, spreading the burden among the parties as equitably as possible."

Accordingly, a means of raising the funds to meet the aggregate costs was proposed which was based upon the completion of the work under a 15-year programme, and completion of annual payments in the cost of power in approximately 20 years. Each Niagara division 25-cycle municipality would provide out of its own resources and credit the cost of converting its own distribution

facilities. The Provincial Commission would provide out of its own and its rural capital accounts that part of the expenditure involved in converting its generating and transmission which was properly chargeable to capital, while a frequency changeover reserve would be created to meet that part of the Commission's expenditures which was not properly chargeable to capital, including the cost of consumer changeover.

Mr. Walters went on to explain how the frequency changeover reserve would be built up. It would draw from four sources. First of all, there was a special contingency reserve, which would provide some \$32,000,000 to start off with. Then the average system cost of power would be stabilized for 20 years at the 1945 rate. This was calculated to provide for several years an additional amount of the same type as the special contingency reserve. A third source for the frequency changeover reserve would be provided by a surcharge of \$1.20 per horsepower per annum on the total cost of power in the Southern Ontario system. It was estimated that the annual balance of the fund thus raised would earn interest at 3 percent. The total interest over the 20-year period would provide the fourth resource for the changeover reserve. In this manner, Mr. Walters pointed out, an amount exceeding \$135,000,000 would be raised for conversion purposes.

With regard to the assessment of \$1.20 per horsepower on the total system load, Mr. Walters explained that this represented approximately 5 percent of the average system cost of power in 1945.

MODERN BELT USED BY LINEMEN CHALKS UP FINE SAFETY RECORD

**Has Not Failed In One Single Case — Introduced
In Canada About 1920**

**By Mildred C. Redmond,
Hydro News**

To the layman, the lineman's belt may look like just another leather belt, and a large and unwieldy one at that. But to the lineman it is his dependable and personal protector that stands between him and the danger of an accident.

A lineman's job is carried on mostly in mid-air and is dangerous enough at

best. Before this particular belt design was introduced, about 1920, not a year went by without at least one serious accident or death. Since it has been used it has chalked up a fine record, for not in one single case has it failed the lineman who was wearing it or been responsible for any accident.

Up to 1900, men who worked high up on poles wore only ordinary tool belts and held themselves on by cocking a

leg around the pole. Around 1900 a strap was introduced to go around the pole and fasten to the tool belt, a "lazy back" it was popularly called. The men owned their own belts and ordered them made at the local harness shop. The hardware in the belt was the same type as used in a harness and often the leather was not of good quality. There were a good many accidents and in each case

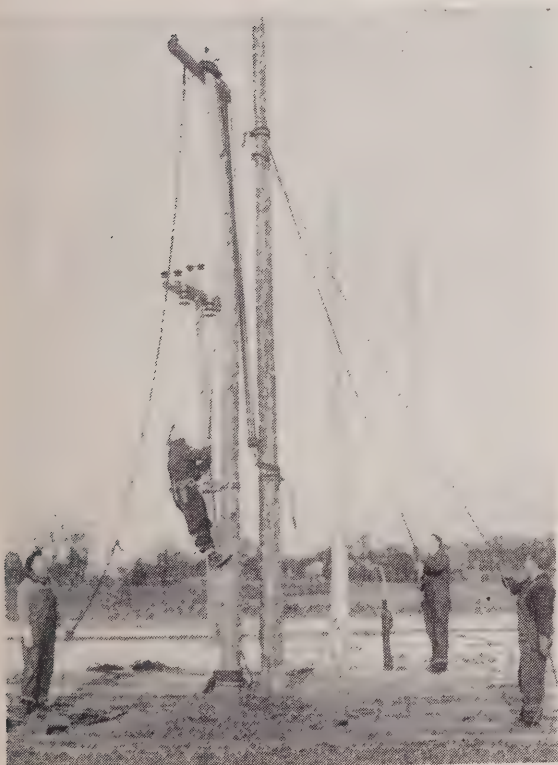
(Continued on page 24)



NEW LINEMEN are given careful instruction how to wear their safety belts, how to keep them in good condition and how to detect defects in the leather. In addition to the belt, the Commission provides the linemen's climbers and the necessary tools.



CENTRE PICTURE: Wills Maclachlan, head of the employees' relations department of the H.E.P.C., contrasts the newer type of safety belt, (in his right hand) with one of the earliest ones used at the beginning of the century. Pictures to the left and right show the safety belt in use.



HIS CLIMBERS securely set in the pole, this trainee is making a final check on the fall line of a set of blocks which has been properly lashed to a pole that is to be removed.



THIS INSTRUCTOR is fitting a trainee lineman for his belt. The correct fit is important for the comfort of the lineman. Notice that the D-rings are located just in front of the hip bones.

Dog Team Yields to "Bombardier"

Snowmobile Now Making Two Regular Trips Weekly Between Timmins And Hydro Plants On Mattagami River

Since the beginning of its activities in Northern Ontario, The Hydro-Electric Power Commission has been interested in the experiments made with mechanized equipment specially designed to meet winter road and trail conditions. Hydro's operating department has itself tried out motor toboggans and propeller-driven snowplanes, and these have proved useful in certain localities. It would seem, however, that in many districts they are not adapted to supplant the old, reliable dog-team patrol, while, of course, they are unsuited for the carrying of any considerable load or for the conveyance of personnel in any numbers. For these reasons the work-outs of a new type of snowmobile, which was placed in service in the Timmins district this winter, are being attended with considerable interest.

Engine In Rear

The new vehicle, known as the "Bombardier", is a half-track caterpillar type, with the engine fitted in the rear and the front of the chassis supported on easy-gliding, steel, ski-shaped shoes to which the steering gear is connected. Power is transmitted to sprockets which engage the treads at their forward ends. The treads are held down to their work by four pairs of idler wheels in close alignment. The efficiency of the specially-designed sprockets, together with the flexibility and exceptional traction of the treads, are said to be distinguishing features. Ten supporting points divide the weight of the load equally on wheels and skis, reducing to the minimum the reacting pressure on snow. In addition to space for baggage and supplies, there is seating accommodation for ten passengers.

This snowmobile is now making two regular trips each week between Timmins and the three Hydro generating plants on the Mattagami river. In previous winters, the 28-mile journey to Lower Sturgeon generating station, the 13-mile trip to Wawa and the 9-mile jog to Sandy Falls were made by horse-drawn equipment, which, on an average, took four to six times as long to negotiate the distances as the snowmobile. Going "all out," the snowmobile could, it is believed, better its own recorded performances, but for economical reasons, such as

VOLUNTARY SAVING IMPORTANT DURING SHORTAGE—SAYS STRIKE

Addresses Joint Annual Meeting Of Districts 7 and 8, O.M.E.A.—New Officers Elected

Several drastic cuts in "at-will" contracts had had to be made in industrial loads in varying amounts up to 350,000 horsepower, W. Ross Strike, K.C., H.E.P.C. commissioner, stated when discussing the power shortage at the joint annual meeting of districts 7 and 8, Ontario Municipal Electric Association, held in the auditorium of the Collegiate Institute at Woodstock on January 15.

This meant, he said, that industry was not getting power which it badly needed during some hours of the day. The export of at-will power, he went on, had been cut off during hours of shortage, and the H.E.P.C. was scraping the barrel in order to obtain more power. Also, he said, when transmission lines were loaded to the limit, power failures were apt to occur.

Voluntary saving of electricity by every possible means was very important, Mr. Strike said, and everybody was urged to co-operate in this respect. If the load continued to increase, next year the situ-

ation would be even more serious than at the present time, he stated.

Later in the afternoon, members of the two districts held their respective business meetings in separate rooms of the Woodstock Collegiate Institute. District No. 7 was presided over by H. R. Henderson of Woodstock, and District No. 8 was under the chairmanship of R. M. Durnford of Sarnia.

During the business session of District No. 8, Mr. Durnford, president of the O.M.E.A., presented his resignation as chairman of District No. 8, stating that as he had been elected president of the O.M.E.A., he wished to be relieved of his duties as chairman of the district. He also pointed out that this was advisable in order to give District No. 8 full representation at O.M.E.A. executive meetings. In view of the circumstances, Mr. Durnford's resignation was accepted, and it was agreed that the newly-elected chairman should take office immediately.

In the course of the meeting the following resolution was passed:

"In view of the indicated plans by

(Continued on page 16)

fuel consumption and wear-and-tear, it has been considered inadvisable to exceed a cruising speed of 20 miles an hour. Keeping within this limit, the gasoline consumption for the 1,550 miles driven up to January 15 is reported to have averaged a gallon for every 8½ miles.

A Snow Vehicle

Referring to the snowmobile in a recent report, A. C. Ferguson, Hydro's district superintendent at Timmins, stated that it had given very satisfactory service on snow roads and that it had been very steady and reliable on ice. Although, up to the time of writing, no exceptionally deep drifts had been encountered this year, he believed that the "Bombardier" was capable of giving a very good account of itself under any conditions which might arise. He pointed out, however, that the machine was essentially a snow vehicle and that operation on bare roads might be expected quickly to wear out both skis and treads. There was, he added, some difficulty in making sharp turns. This operation, he thought, might be assisted by providing either a separate brake or a separate clutch for each tread. Such devices, he understood, had been successfully employed in the North in the famous "Operation Musk-ox."

A similar type of snowmobile to that employed by the Commission in the Tim-

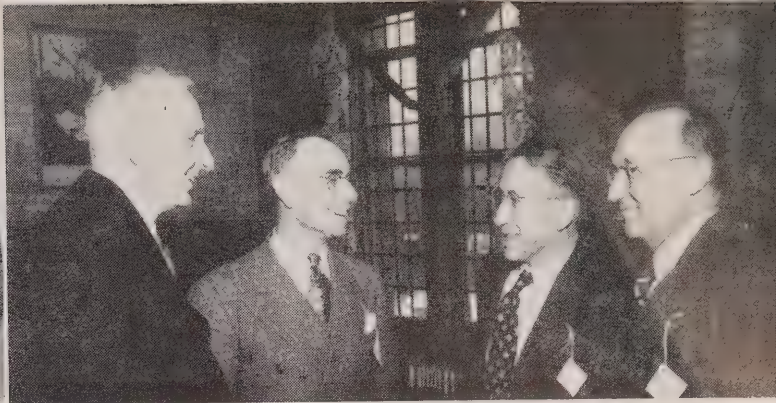
mins area is reported to be in use by the Patricia Transportation Company. Starting from Sioux Lookout, the company's tractor trains call at Hydro's Ear Falls plant on their way to the Red Lake mining district, and Hydro operators have had frequent opportunity of seeing the snowmobile engaged both in breaking trail and in supervising convoys. This work calls for good speed and reliability on both snow and ice surfaces, and Hydro observers are said to have been very favourably impressed by the performances witnessed.

AN INGENIOUS IDEA

HATS OFF to William Gebbie, Accountant at the Oshawa Public Utilities Commission for a most ingenious idea for boosting lamp sales. Examining the Hydro blotter with the mother and baby cartoon on it one day it suddenly occurred to him to check over the day's paper for new arrivals and to send a couple of the blotters to the proud mother as a gesture of good will. The idea worked and during the next few months he had many mothers dropping in to tell him how amused they had been to receive them and, incidentally, staying to buy Hydro lamps. Nowadays, he has it down to a system: his secretary makes a daily list from the newspaper and regularly once a week the blotters go out to the new parents.



THESE ARE O.M.E.A. District No. 8 officers elected for the ensuing year: A. Durnford, Sarnia, (retiring chairman); Gordon H. Fuller, Windsor, man; Charles Austin, Chatham; W. P. Bolton, Windsor; A. P. St. Louis, side; E. C. Morand, Tecumseh; S. L. Hamilton, St. Clair Beach; J. D. Leach, Windsor.



THIS SMILING group of delegates hail from Aylmer, and reading from left to right are: E. R. Clement, George E. Brown, H. M. Gunstone and W. B. Curtis.



ELL, WHAT'S on the programme?" would appear to be the topic of conversation of this group. Left to right they are: H. Craig, Toronto; A. T. Lashbrook, H. W. Thompson and George Mistele of Rodney.



R. S. "Smoky" Reynolds of Chatham asks a question during the discussion period of the cycle changeover. Others identified include: V. Hamacher and Lawrence Box of Parkhill; F. Ford and J. W. Peart, St. Thomas; J. T. Barnes and G. N. Galloway, Sarnia.



ME OF the delegates looking "happy and satisfied" after having luncheon at the Woodstock Armouries are now returning to the Collegiate Auditorium for the afternoon session. The group includes L. J. Penhale, Benson Tuckey and K. J. Lampman of Exeter; and A. E. Rumball of Clinton.



WAITING PATIENTLY for the dinner bell, these delegates from left to right are: H. Brooks, J. Hunt, R. A. Logan and William White, all of Dorchester; and R. M. McKenzie, H.E.P.C.

VOLUNTARY SAVING

(Continued from page 14)

which Toronto, Hamilton, Dundas and the areas adjacent to the point of power generation, it appears probable that these districts will have 60-cycle power prior to the areas more remote, and that this will progressively extend to the southerly and westerly sections of the area now served by 25 cycles, and that a period of 12 to 15 years might elapse before communities in the Windsor, Chatham and Sarnia districts have 60-cycle power

made available to them.

"THEREFORE BE IT RESOLVED

"In view of the changing conditions which will occur during this interval, to ensure an uninterrupted supply of power while these changes are taking place, and to facilitate the actual changeover, that the H.E.P.C. be requested to investigate and report upon, with the least possible delay, the construction of a steam plant in the Windsor district as a means of removing some of the handicaps to which the municipalities are subjected from time to time."

Officers for District No. 8 elected for the ensuing year are as follows: chairman, Gordon H. Fuller, Windsor; vice-chairman, Charles Austin, Chatham; directors: W. P. Bolton, Windsor; A. P. St. Louis, Riverside; E. C. Morand, Tecumseh; auditors: S. L. Hamilton, St. Clair Beach; J. D. Leach, Windsor.

Officers re-elected for District No. 7 are as follows: chairman, H. R. Henderson, Woodstock; directors, J. B. Hay, London; P. R. Locke, St. Thomas; secretary-treasurer, H. F. Parker, Woodstock.



FREQUENCY CH. INGE OVER was the principal topic of discussion during the convention session of the joint annual meeting of O.M.E.A. Districts 7 and 8 held at Woodstock on January 15. When this photograph was taken, R. L. Hearn, H.E.P.C. chief engineer in charge of construction and design, was at the "mike." Sitting down, left to right are: R. T. Jeffery, H.E.P.C., chief engineer in charge of municipal affairs; Hon. George H. Challies, vice-chairman of the Commission; H. R. Henderson, Woodstock Public Utilities Commission; W. Ross Strike, K.C., H.E.P.C., commissioner; R. M. Durnford, Sarnia Hydro-Electric Commission; M. J. McHenry, H.E.P.C., director of promotion.



JOSEPH BULL



JOSEPH BULL was born 57 years ago at Burton-on-Trent, England, and after leaving school was apprenticed to a master mechanic, where he learned the fine points of his trade. Thirty-seven years ago, he arrived in Collingwood, Ontario, with his parents and promptly went into the young business of repairing gas buggies.

Mr. Bull is now serving his eleventh year as a Hydro commissioner for the Collingwood Public Utilities Commission, and is interested in all forms of public betterment. He is married and has one daughter, Josephine, and whenever he has a spare moment he likes to collect his family around the piano and have a good old fashioned sing-song.

HARRY E. AYRES DIES

An employee of the Norfolk rural Hydro for the past 21 years, and a well-known resident of Simcoe, Harry Earl "Joe" Ayres died recently following a brief illness. He was in his 38th year.

Born in St. Williams, Mr. Ayres was the son of Mrs. Charles Streeter. He joined the rural Hydro staff in 1926 and at the time of his death was line foreman.

The deceased is survived by his widow, Annie McMann, one son and four daughters. The pallbearers were: H. C. Fort, R. B. Coones, H. C. Blakely, H. F. Glover, G. A. Smith and D. H. Ford, all former Hydro associates.

MAYOR G. J. KOHL

If you ever want to locate Graydon John Kohl, mayor of Collingwood, when he's not engaged in civic business look for a very smart ladies' wear shop which is well illuminated with fluorescent lighting. Mr. Kohl was born in London, Ontario, where he received his education. However, before he was out of school, he enlisted in the infantry and later transferred to the old Royal Flying Corps, where he served as an instructor during the First World War. This is his fourth term as mayor, having previously held this office in 1936, 1937 and 1938. Dur-



ing his first term, he conceived the idea of the Collingwood Ski Club and was one of its original five directors.

His duties as chief magistrate keep him pretty busy but he still manages to find time to look after his business ventures, including the ladies' wear store. Mr. Kohl is married and has one daughter, Constance.

25TH ANNUAL DANCE

A special event in the history of the Ontario Hydro-Electric Club will be chronicled on March 7 upon the occasion of the club's quarter century dance at the Royal York Hotel, Toronto.

So don't miss it! Invite all your friends as arrangements are being made to make it an outstanding occasion. There will be favours, entertainment and novelties. Dancing will be from 9 p.m. until 2 a.m.

The dance committee comprises George

ALLAN McINTOSH



A local boy who was educated in Collingwood and lived there all his life, Allan McIntosh, chairman of the local Public Utilities Commission has served three terms as mayor and two previous terms as a Hydro commissioner. Mr. McIntosh is engaged in the retail shoe business, and is interested in social welfare work and fraternal organizations.

SARNIA CHAIRMAN DIES

Members of the Sarnia Hydro-Electric Commission are mourning the passing of their chairman, Edward J. Blake who died recently after having been in bad health for some time.

Born in Kilkenny, Ireland, Mr. Blake was brought to Canada at the age of seven, the family having settled in the Point Edward and Sarnia district. For a number of years, Mr. Blake was an engineer with the Grand Trunk Railway, and for 37 years he was night superintendent with Imperial Oil, having been superannuated in 1941.

Mr. Blake served for three years on the city council and was mayor in 1934. He had also served on the Sarnia Hydro-Electric Commission for nearly 12 years. He was vice-chairman in 1937 and became chairman in 1938.

Taylor, chairman; Fred Pope, Wilf Morris, Roy Taylor, Norma Walker and Rita Ryan.

SEEKS "PREDOMINANCE" ON HYDRO COMMISSION

District No. 6 Resolution Urges No Changes Be Instituted Until Approved By O.M.E.A. Executive

Responding to the suggestion of its chairman, G. W. Gordon of Kitchener, that municipal commissions, in a co-operative but earnest spirit, should take more interest in the conduct of Hydro affairs, a special meeting of District No. 6 of the Ontario Municipal Electric Association passed a resolution at Stratford on January 29 urging that, in any enlargement of the Hydro-Electric Power Commission, O.M.E.A. representation be given predominance. The opinion was also voiced that the O.M.E.A. representatives should be elected.

The text of the resolution, which was moved by J. W. Monteith of Stratford

and seconded by A. G. McLean of Seaforth, is as follows:

"Whereas the Honourable George Drew did, in a recent radio broadcast, state that it is his intention to introduce a bill giving authority to the Government to enlarge the Hydro-Electric Power Commission, and whereas the proposed enlargement has not been requested by the Ontario Municipal Electric Association who are representatives of the owners of the Hydro system and who are responsible for its proper operation, be it therefore resolved that the members of District No. 6 of the O.M.E.A. petition Honourable George Drew to meet with the executive of the O.M.E.A. for the purpose of discussing any proposed changes in the number of members of the H.E.P.C., and that no such changes be instituted until such discussion has taken place and approval has been given by the O.M.E.A.

executive.

"Be it further resolved that the representation of the O.M.E.A. be predominant on the Hydro-Electric Power Commission.

"Be it further resolved that such O.M.E.A. representatives be elected on a majority vote of the members of the O.M.E.A. in convention assembled."

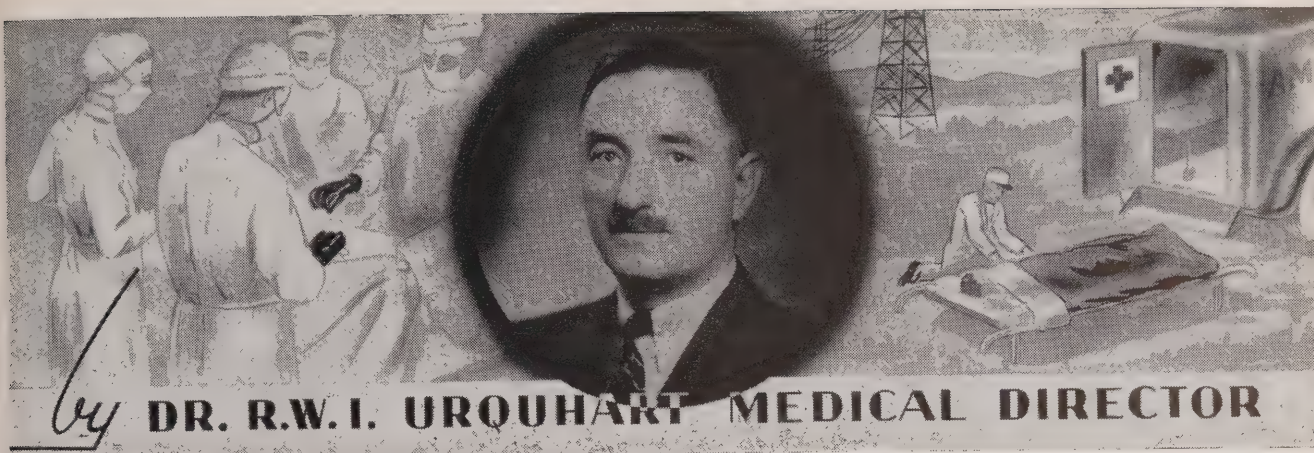
Copies of this resolution, it was understood, were being sent to Premier Drew and to the secretary of the Ontario Municipal Electric Association.

The resolution followed on the heels of a discussion, led by Roy Pierson of Brantford Township and a former chairman of District No. 5, which ranged around the status of the O.M.E.A. and its right to elect its own representative or representatives on the H.E.P.C. Mr. Gordon said that he did not think there could be any objection to the man who represented them at present. He was sure that if the delegates had exercised their franchise, he would have been elected. (This statement was received with acclaim.) But he felt that it was the privilege and duty of the O.M.E.A. to make the choice.

A.M.E.U. COMMITTEE AND HYDRO ENGINEERS CONFER ON PROPOSED FREQUENCY CHANGE



MEMBERS OF a special committee of the Association of Municipal Electrical Utilities were in conference with Commission engineers on the proposed frequency change when this photograph was taken by the Hydro News' cameraman in the Board room of the Administration Building, Toronto. Included in this picture are: A. W. Bradt, Hamilton; R. M. Laurie, H.E.P.C.; P. B. Yates, St. Catharines; J. A. Williamson, Niagara Falls; William Bishop, Guelph; W. Roy Harmer, H.E.P.C.; Claude McMann, Sarnia; E. M. Ashworth, Toronto; J. E. Teckoe, Jr., Galt; A. Bromley, Kitchener; Ray Pfaff, St. Marys; W. R. Catton, Brantford; R. J. Smith, Perth; J. W. Peart, St. Thomas; J. Clark Keith, Windsor; J. R. Sullivan, Woodstock; A. H. Frampton, H.E.P.C.; E. V. Buchanan, London; H. R. McClymont, York Township. Not shown in this group, but taking part in the proceedings were A. B. Manson, Stratford; and R. S. Reynolds, Chatham.



DR. R.W.I. UROUHART MEDICAL DIRECTOR

THE COMMON COLD

The common cold is the term used to describe a whole series of upper respiratory infections involving the membranes of the nose, throat and adjacent structures and producing signs and symptoms with which we are all familiar. These upper respiratory infections account for over 30 per cent of employee absences during the winter months of an average year.

Caused By Bacteria

These infections are caused by a multitude of disease-producing organisms. Some of these belong to the group known as bacteria and others, much smaller, belong to the virus family. Members of both of these groups are constantly present in small numbers in the nose and throat of normal individuals. They do not produce disease because the defence mechanisms of the body are adequate to keep them in check. As a matter of fact, these defence mechanisms in health are able to deal with relatively large numbers of organisms. They constitute what is sometimes described as the "resistance" of the individual to infection. It is only when the "resistance" becomes lowered, as in the state of poor health, that these organisms are able to increase to pathological proportions and produce infection.

Poor health with its accompanying lowered resistance can occur as a result of inadequate diet, unsuitable clothing, deficient rest, excessive worry and such like factors. When to any or all of these is added exposure to sudden changes of temperature with excessive chilling or overheating, or perhaps, most important of all, undue fatigue, the disease producing organisms may get the upper hand and a "cold" will result.

Spread By Droplet Infection

The disease producing organisms are transferred from an individual with a cold to others, by droplet infection. That is these organisms are carried on small drops of moisture sprayed into the sur-

rounding air by coughing, sneezing or spitting. They may be breathed in by individuals in the immediate neighborhood or they may be carried to quite considerable distances and settle on the floor or furniture. They may adhere to small particles of dust and then may be spread still farther in sweeping or dusting; they may be picked up on the hands and transferred to the mouth. A proportion of exposed individuals will then "catch" a cold.

It is obvious that overcrowding which so frequently occurs these days in the home, schools, theatres and street cars, contributes largely to the spread of infection. It is fortunate that for the most part, these organisms are not long-lived if deprived of moisture. They are extremely susceptible to sunlight and are killed by it. Clean, well-ventilated bright and uncrowded rooms and offices tend to decrease the possibility of spread of infection.

No Specific Cure

The prevalence of the common cold, together with the serious complications such as pneumonia, pleurisy, etc., which may follow, has stimulated physicians to search for a method of prevention and cure. To date no specific remedy has been found. Symptomatic treatment still has to be relied upon. It is generally agreed that the new wonder drugs—Penicillin and the Sulphas—should be reserved for the more serious respiratory infections. Their use in minor infections may render the occasional individual sensitive to them so that they cannot be used when desperately needed.

No Specific Preventative

There is no specific preventative for colds. At a recent meeting of Industrial Physicians in London, Ontario, this subject was discussed at some length. There has been produced no sound evidence that cold vaccines either oral or by injection have real merit. It is true that the occasional patient claims to have been benefited greatly by a course of cold vaccine, but group studies under pro-

perly controlled conditions have failed to show that these measures have value. Recently a vaccine has been developed for Influenza which looks hopeful. It is still in the experimental stage; unfortunately its administration is not without risk and the immunity it provides is short—not more than six to twelve weeks.

That this situation should exist, is not unreasonable when it is realized that there are literally millions of varieties of organisms, any one or more of which, may be responsible for a particular epidemic of colds. Most cold vaccines are made up of a number of varieties of organisms, at most sixty. It would be sheer chance if a particular epidemic were due to one or more of the sixty varieties, in which case it MIGHT be of value.

Prevention Of Colds

How then, can one prevent colds? It is of primary importance that the individual be kept in good health. Resistance is thus improved. Attention should be paid to diet. It should be adequate and varied. Proper rest is extremely important. One cannot "burn the candle at both ends" and remain well indefinitely. Dress for the weather, both outside and in the office. See that the home and the office are maintained at a reasonable temperature and let some fresh air in occasionally. Even in the coldest weather it does not hurt to open the windows and let fresh outside air blow through once a day.

If You Get A Cold

Then, if in spite of all this you get a cold, look after it. If you continue at work, keep warm and increase your usual rest periods. Stay at a reasonable distance from those who are well and be particularly careful of sneezing and coughing; smother the sneeze or cough in a handkerchief. If you develop fever, you should be in bed. Take plenty of hot or cold drinks. Fruit juices are excellent, a laxative if necessary. Stay in bed long enough to get over it. If any unusual symptom develops, call your doctor, you may need help.

PLANS NEARING COMPLETION FOR MARCH 4-5 CONVENTIONS

**Over 1,000 Delegates From
Hydro Municipalities Expected
To Take Part In Sessions
At Toronto On March
4 and 5**

Plans are now being completed by the Ontario Municipal Electric Association and by the Association of Municipal Electrical Utilities for the joint annual convention to be held at the Royal York Hotel, Toronto, on March 4 and 5, when it is anticipated that over 1,000 delegates from Hydro municipalities throughout Ontario will take part in the sessions.

The programmes for the convention, now in the final stages of preparation, will include a wide range of subjects and a number of topical problems which will be reviewed during the proceedings.

Register At Roof Garden

It is anticipated that many of the delegates will register at the Roof Garden between 9 and 12 on Monday night, March 3, while later arrivals on Tuesday morning will register at the convention headquarters on the convention floor.

In the A.M.E.U. section the programme Tuesday morning will include discussions on merchandising and rates conducted by J. E. Teckoe, Jr., Galt, and R. S. Reynolds, Chatham, respectively. The business meeting at 11 a.m. will be opened with the presidential address by R. J. Smith of Perth. At this session reports of committees on accounting and office administration, rates, merchandising, employees relations and regulations and standards will be presented. This session will close with the election of officers for the ensuing year.

At noon the A.M.E.U. delegates will sit down at a joint luncheon with the O.M.E.A. The speaker on this occasion will be Hon. Orlow M. Brees, member of the New York State legislature.

Plan Joint Luncheon

On Tuesday afternoon there will be a joint convention session, during which there will be a discussion on the proposed cycle conversion. Prior to the banquet in the evening there will be a meeting of the new A.M.E.U. executive.

A number of interesting panel discussions are on the programme for Wednesday morning. Panel 1, under the chairmanship of D. E. Charters of Windsor, will review the problems of large municipalities. Papers to be presented at this session include: "Supervisory Control For Substations," by F. F. Ambuhl of the



R. J. SMITH R. M. DURNFORD

PRESIDENTS OF the Association of Municipal Electrical Utilities and of the Ontario Municipal Electric Association. The joint annual convention of these groups will be held this year on March 4 and 5 at the Royal York Hotel, Toronto.

Toronto Hydro-Electric System; "Radio Control," by A. W. Bromley of Kitchener Public Utilities Commission; "Water Heater Control," by A. L. Furanna of London Public Utilities Commission.

The problems of smaller municipalities will be reviewed by Panel 2 under the chairmanship of Ray Pfaff, St. Marys Public Utilities Commission. Papers at this session will include: "Distribution System Design," by S. Webster of Tillsonburg Public Utilities Commission; "Operating Problems," by L. G. McNeice of Orillia Water, Light and Power Commission; "Maintenance Of Distribution Systems," by A. E. Fort of Simcoe Public Utilities Commission.

Panel Sessions

Panel 3 under the chairmanship of R. S. King, Midland Public Utilities Commission, will discuss accounting and office administration problems, while the following papers will be presented: "Secretarial Practice," by C. O. Biggs, F.C.I.S., Massey Harris Company, Limited, Toronto; "Stores Accounting," by J. E. Coubrough, Hamilton Hydro-Electric System; "Accounts and Vouchers Payable," by C. W. Eastwood, London Public Utilities Commission; "Customers' Contracts, Change of Name and Service Removal Orders," by A. Summers, Toronto Hydro-Electric System.

At noon on Wednesday, at a joint luncheon with the Electric Club of Toronto, the speaker will be C. T. Burgh, vice-president in charge of sales, Iron Fireman Manufacturing Company, Limited of Cleveland, Ohio. During the afternoon session the speakers will include

Earl Miner of the American Telephone and Telegraph Company, who will discuss accident prevention, and Gordon Culham of Culham and Dryden, City and Regional Planning Consultants, Guelph, whose subject will be "Town Planning." The convention is scheduled to adjourn at 4 o'clock.

Special Travel Arrangements

This year arrangements have been made with the Canadian Passenger Association, to provide railway transportation to and from Toronto at regular fare and one-third rates. In order to qualify for this special rate, it will be necessary for each delegate, in securing his train fare, to purchase a one-way regular first-class or coach-class ticket, and ask the Ticket Agent for a Standard Convention Certificate (Form 24). An officer of the Association and a special agent of the railways will be at the registration desk on March 5 to endorse and validate the Certificate. On presentation of this validated certificate to the Ticket Agent in Toronto, return tickets will be issued at one-third fare.

"THANK YOU" NOTE RECEIVED BY HYDRO

When she observed "insulators flashing on a line on Prince Albert Road near No. 2 Highway," Mrs. Stanley Stewart of R.R. No. 1, Chatham, Ontario, promptly reported the matter to the Chatham Hydro operator.

Repair men, who were despatched to the scene, found that two insulators on a pole were arcing heavily. The insulators were replaced and an expression of appreciation was sent to Mrs. Stewart. In reply, she sent the following letter:

Dear Sir: Was surprised to receive a cheque in the mail for reporting trouble on the power line in front of our house. However, it is just another example of the courtesy extended at all times to the public by the H.E.P.C. and I appreciate it.

My husband always says that the Hydro bill is one bill he pays that he feels he is getting more than his moneys worth.

During the recent ice storm our Hydro was off for only a few hours but long enough for us to realize just how important it is. Have often felt like writing a little thank you note to the Commission to show how much we appreciate the service so here it is. Thank you very much. (Mrs.) Olive Stewart.



Hydro HOME FORUM by Edithemma Muir HOME ECONOMIST

Maybe a woman's work is never done but you can't be at it every minute of your waking day. Sit down awhile and read, "Ideas Have Legs," then your legs will feel like taking strides in the right direction. . . . Man by the name of Peter Howard wrote it.

Lenten season begins with pancakes—a little early for fresh maple syrup to drool over, so drip honey over them. Soften honey slowly over hot water.

By the way, the best energy food is honey and it is produced in Canada. Honey is good and it's good for you. You can put it on toast and also use it in place of sugar. Any way you eat it, it helps keep you in good health. For honey, like the bee, keeps you buzzing happily. It is easy to keep on the kitchen shelf; no need to store in the refrigerator.

One of the elevator girls said that a smidgin of curry in cream of corn soup pleases guests immensely, but the noise that ensued prevented me from stopping an argument that curry does not come from a certain plant. It is a specific combination of spices. Purchase a small amount at a time and keep the container closed tightly.

One food item that has been reduced in price is oranges! Everybody likes them and nutritionists say that they are an important source of vitamin C—that's the glamour vitamin since it protects gums, teeth and skin.

This is the time of year to make orange marmalade, preferably with Seville oranges. We all like preserves, such as marmalade even though it has very little vitamin content.

Tips for teas: Split yesterday's muffins or baking powder biscuits and put in a

Fillets in Batter

- 2 lbs. fresh fillets
- 1 tbsp. vinegar
- 1 cup all purpose flour
- 1/2 tsp. salt
- Dash of pepper
- 1 egg, slightly beaten
- 1 cup milk
- 1 tbsp. melted shortening

Cut the fillets in serving pieces and brush lightly with vinegar. Sift together the flour, salt and pepper. Slightly beat the egg, add the milk and melted shortening. Mix till light with dover beater. Pour into the flour mixture all at once and again beat until thick and smooth. Have the fat hot (375 degs.). Dip the fillets in batter till well covered and deep-fry until golden brown. Note: The fillets may also be panfried, using about 4 tbsps. of fat in the frying pan.

Baked Creole Tripe

- 1 lb. tripe
- 1 cup sliced onions
- 3 tbsps. lard or meat dripping
- 1 cup soft bread crumbs
- 2 cups chopped celery
- 2 cups tomato juice
- 3/4 tsp. salt

Pre-cook tripe by washing thoroughly in two or three cold waters, then cover with salted water and simmer until tender—one or two hours. Cook it thoroughly. If pickled tripe is used, soak 15 mins. in cold salted water before cooking. After cooking, cut in strips 1/2 inch wide. Combine celery, onions and green pepper and brown in hot fat. Put vegetables into casserole, add tripe. Mix tomato juice, salt and pepper; pour over tripe. Top with crumbs, cover and bake in electric oven for two hours at 350 degrees.

thin slice of cheese sprinkled with chopped nuts. Place these in a covered baking dish and warm in the oven. They will go further than five or six tiny sandwiches.

One of the easiest ways to prepare smoked fish is to place the servings in a greased baking dish. Season with salt, pepper and lemon juice. Set in a pan of hot water, cover and steam.

It may be frosty outside, but a frosty finish to a meal is delightful. A quart of ice cream will serve seven or eight when piled in baked tart shells. Top with home-canned cherries for a dessert that's easy as a wink.

During wintry months many homemakers feel "hemmed" indoors. Rearrange living-room furniture to make a conversation group. Plug in lamps to provide good vision at each new centre.

For the best view hang pictures with their centres at normal eye level. Most pictures are hung too high.

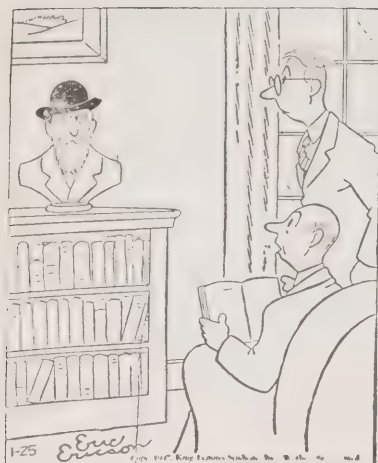
To save your fingers when putting up short tacks or picture hooks, slide them through a small piece of paper and hold in place while you hammer, then tear off the paper.

A blown fuse should be replaced with another one marked with the same number stamped on the end—15 or 20 amperes. Good idea to keep two or three on hand.

There's an old story about the shoe-maker's barefoot boy, but we don't believe that any electric-conscious family would have any exposed wiring anywhere. This means that any broken or cracked switch plate or outlet plate should be repaired at once by an electrician. Plates should be tightly screwed in, and frayed or broken cords should be replaced or repaired.

Here's the trick to keep bias collars and cuffs of madam's dress in shape. After washing, pin cuffs around milk bottle, and the collar around an inverted vegetable bowl.

Lighter Lines



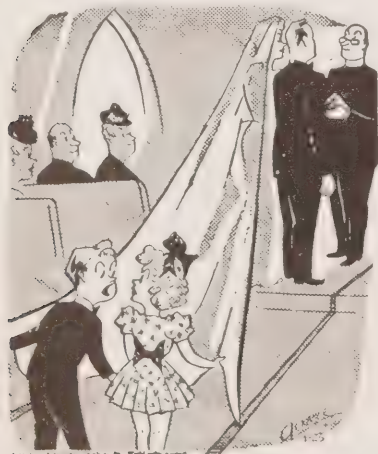
"I dunno—it came with the bust!"

In answer to a letter from his landlord to vacate his humble home, a wily wit wrote: Dear Sir: I received your letter with notice to vacate, I remain, yours truly,

"Your husband looks like a brilliant man. I'll bet he knows everything."

"Don't be silly—he doesn't suspect a thing."

Coed: Shakespeare is immortal.
Boy friend: Oh, well, we all are once in a while.



"My uncle held up a train and got twenty years!"

Proud of having a new arrival in his home, little Johnnie announced to his school teacher that he had a new sister and she had cost more than a hundred dollars.

"Goodness," teacher replied. "Isn't that a lot of money for a tiny baby?"

"Yes, but think how long they last!" was Johnnie's reply.

* * *

The sweet young thing asked me if I could tell her how to play golf. "Sure, it's easy enough," I told her. "All you do is smack the pill and then walk."

"How interesting," she replied. "Just like some auto rides I've been on."

* * *

And then there is the mouldy old bromide about the Georgia gal whose father was an undertaker and she insisted on telling all her new friends that he was a southern planter.

* * *

"Before using your Hair Restorer I had two bald spots, now I have only one."

* * *

The young swain had just finished declaring his intentions to his future father-in-law. "And now sir, that I have told you I am going to marry Anne, there's one thing I want to get off my chest."

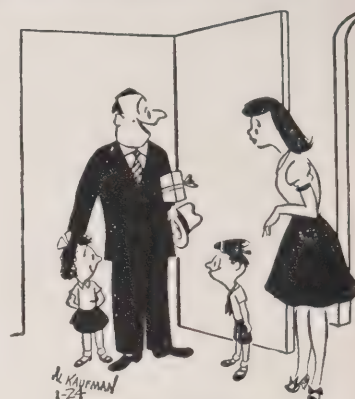
The F.F.I.L. "You just tell me about it, my boy."

"Well, it's like this," the lad stammered, "it's a heart with 'Mabel' and it's tattooed."

* * *

He had choked her. She was dead; there was no doubt about it. He had listened to her dying gasp. Now she was cold—cold as the hands of death. Furiously, he kicked her. To his amazement she gasped, sputtered and then began to hum softly.

"Just a little patience is all it takes, Harry," remarked his wife from the back seat.



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"I brought the solution to the kid-brother problem!"

Preacher (looking over his large congregation Easter Sunday morning): "I realize there are many here who will not be with us again until next Eastertime. I take this opportunity to wish them a very Merry Christmas."

"You need a shave."

"Do I? Well, the whole family was using the bathroom mirror this morning and I must have shaved my mother-in-law."

* * *

"Who's that close-mouthed fellow over by the stove?"

"He's just waiting for the janitor to return with the cuspidor."



"What d'ya mean, 'quiet,' or we'll wake your father—who d'ya think is holding the ladder?"

#his and #hat

By The Editor

FEW PEOPLE will find it credible that a piano could be stolen in broad daylight from a large downtown store, but such a theft actually occurred in Toronto. We were amazed when we learned the details and the sang-froid which marked the execution of "the job." To the best of our knowledge, this is the only occasion in the history of this store when a piano was "pilfered" for most of the would-be thieves and shoplifters are caught "with the goods" thanks to the highly efficient work of this store's detectives who are very wise to the "modus operandi" of the light-fingered gentry. But more about store crime detection later. First let's deal with the piano-moving coup.

The job had all the indications of having been carefully planned. It appears that a truck pulled up at one of the shipping entrances and several gentlemen in overalls stepped out, boarded the freight elevator and got off at the piano department. Prospective customers were fondly fingering (pianissimo) the keyboards while the manager and salesmen were in attendance, outwardly smiling and polite, but inwardly like trained athletes on a chalk line ready to spring into action should a casual visitor or Little Iodine give forth with too much allegro.

Into this setting nonchalantly sauntered the gentlemen in overalls, carrying a small conveyance on castors, a large piece of cloth and a tarpaulin. They carefully selected a piano, covered it with the cloth and tarpaulin, loaded it on to the conveyance and carefully wheeled it to the elevator with the manager, the salesmen and the prospective customers and even Little Iodine believing that another piano was being delivered to a music lover.

Carrying out their "project" in a "workmanlike" manner, the gentlemen in overalls conveyed the piano out of the freight elevator, through the shipping entrance into the street and on to the truck, while store employees stood with furrowed brows and were just a little "uncertain." As the truck pulled away, one employee, it appears, thought he would check on the "delivery." It was then found that each member of the department had thought that the other knew about the "arrangements" which had been made for removing the piano. Then, the hunt was on, but the piano had disappeared. Under the system which is now in effect, however, we would hate to even attempt to

"borrow" a piano from this store and that leads us to another interesting story concerning outstanding detective work which is being done every day at this business house.

* * *

THIS IS a story of a man who tried to get away with a fur coat and whose bold effort was frustrated by an alert store detective who spotted the corner of a fedora under the "customer's" suit-coat. Wondering why a man should walk through the store bare-headed with his hat hidden, the detective summoned one of his colleagues and they proceeded to follow the man from department to department until they reached the fur department. Here, the man, with the air of one endowed with all the necessary authority, walked up to one of the coats, took it off the mannikin and calmly walked away with it over his arm. With the detectives following closely behind the man made his way to a street door where he slipped on his fedora. Once on the street the detectives went into action according to plan. The one grabbed the coat and the other one the man who put up a battle. Finally he was subdued and turned over to the police.

* * *

HOW DOES a store detective operate? Well, we can't go into too many details but we can pass along a few interesting facts. First of all, a store "Hawk Shaw" is not always a tall, muscular, eagle-eyed gentleman. He may be small, slim and inoffensive looking. In fact, even cunning shop-pilferers can't identify them. As a result, these detectives are able to keep close tab on any suspect.

A detective may be that shopper who is trying on a pair of gloves or who is buying an engagement ring. All the while he is noting every move of the suspect and he knows most of the moves. In fact they know so much, that stores are no longer safe places for folk who may have ulterior motives in mind.

* * *

WE READ with interest a letter written by the wife of a Hydro lineman and published in a Toronto newspaper. Bearing the title "Writ Sarcastic", it reads as follows:

Sir: I read the article in your very worthy paper by James Y. Nicol lauding the Hydro linemen as "unsung heroes." Thank you, Mr. Nicol from myself and I am sure the hundreds of other Hydro wives whose men have been risking their very lives on ice-coated towers and lines

in the Hamilton area. And special thanks from all of us to the hotel proprietor who didn't want to let the men into his dining-room because they wore their overalls. I am sure that it was just carelessness on the part of the boys. You see, when a man works for the Hydro, he is away from home a great deal, from one end of Ontario to the other, sometimes living in camps, sometimes in fine hotels, and we wives are very careful to instill into our men's minds that they must never forget the little niceties, such, for instance, as dressing for dinner. It doesn't matter, of course, if they have been out on the line for 10 or 12 hours or that they were working in sub-zero weather until their feet and hands were frozen. It doesn't even matter that 50-pound cakes of ice fall down on them or high-tension wires threaten their very lives. No, none of that matters but what does is the fact that no matter how cold and hungry they may be they must never enter a dining room in a hotel improperly dressed. How could those boys have forgotten? How could they have been so careless as to lower the dignity of a hotel by appearing in overalls? The hotel keeper, however, while objecting to overalls, wouldn't, perhaps, object too much to calling for help from the boys who make it possible to keep his hotel running smoothly.

—Hydro Wife.

WE HAVE received from G. M. B. Lumgair of the Commission staff another contribution to our poetry corner. Here it is:

DEMOCRACY

*In the living and the giving,
Without rancour, without hate,
In a land so blessed with plenty,
Each one master of his fate.*

*In the straining and the striving—
Unto each his chosen star—
The gold from the dross divided,
In the crucible of war.*

*Old the faiths our brethren fought
for—
Grimly they unsheathed the sword—
Let our voices rise triumphant,
Giving glory to the Lord.*

TRIBUTE PAID TO HYDRO EMPLOYEES

The first function of its kind ever held by the Welland Hydro-Electric Commission, a Christmas party arranged for the staff proved an outstanding success on the evening of Tuesday, December 17th. Employees and their wives to the number of 60 attended the banquet held at the Reeta Hotel and so great a success did it prove that it will likely become an annual affair.

Appointments for the banquet included place cards and favours and the evening consisted of a turkey supper and the screening of several interesting films.

Frank Springer, chairman of the Commission, presided and the guests included His Worship and Mrs. Harold Walker.

Commissioner William Watterson explained that the festivities were arranged as an appreciation to the employees for their excellent work during the war years. "They were trying years and you have accomplished a fine job," he told the employees.

Mr. Watterson lauded the efforts of the various hydro departments including that of the office staff, the line men and

the staffs of the sub-station and meter room. He also paid tribute to the work of Manager T. W. Houtby. "The fact that there have been few power interruptions and practically no complaints speaks for itself," he said.

Manager Houtby expressed his thanks to the Commission for the party and he also lauded the staff for their co-operation during the past few years. He asserted such united efforts would have the effect of maintaining the friendly relations which had existed between the Commission and the staff over a lengthy period.

Ken Brown of the sales promotion department of The Hydro-Electric Power Commission of Ontario presented the greetings of the provincial organization and showed a number of interesting films. It was the general opinion that his contribution to the festivities was outstanding and added much to the enjoyment of the evening.

The programme closed with entertainment consisting of novelty and comic songs.

MODERN BELT

(Continued from page 12)

they were due to the failure of the belt. The snaps were made of malleable iron that sometimes had blow holes in it that caused breakage. The D-rings were small and if the safety strap were twisted in a certain way it was quite possible to have the snap come out of the D. Again, the D-rings were held to the body belt by stitching and rivets on the outside and if they gave way, as they sometimes did, the D-ring would pull out and the man would fall.

Introduced About 1920

About 1920 the new design for the belt was introduced in Canada by a group interested in safety measures. The Hydro-Electric Power Commission of Ontario adopted it as did other companies who employed men for the same type of work. The new belt had hardware of drop forged steel, the D-ring was placed so that the body belt went through the D and the leather for it was heavier and very carefully selected. Arrangements were made with a reputable supplier for the leather used in these belts. The leather for these belts, in fact, is so highly selected that only two to four straps can come out of each hide.

Belts Owned By Hydro

The belts are ordered and owned by the H.E.P.C. They are given out to the linemen who are taught how to look after them and maintain them and how to watch for any weaknesses. The instructional and supervisory work is done by members of the employees relations department.

OFFICERS ELECTED BY DISTRICT NO. 5

In the election of officers which followed the annual meeting of district No. 5, O.M.E.A., held in Hamilton on January 22, Richard Thomson of Paris was returned to the chair for another year, while William Watterson of Welland and George Austin of Dundas, were elected as vice-presidents. Thomas Barnes, Niagara Falls; D. P. Cliff, Dundas; Roy Pierson, Brantford Township; and K. C. MacLeod, Stamford Township, were named directors. George Boucher, who hails from Paris, will be treasurer for the coming year and the position of secretary has still to be confirmed.



THESE ARE camera impressions of the staff Christmas Party held by the Welland Hydro-Electric Commission. The head table group includes Ken Brown, H.E.P.C., Mrs. William Watterson, Commissioner William Watterson, Mrs. Frank Springer, Frank Springer, chairman; mayor Harold Walker and Mrs. Walker, T. W. Houtby, manager, and Mrs. Houtby. Among those seated in the foreground are W. H. Moore (oldest employee) and Mrs. Moore, Alvie Smith, Mr. and Mrs. Harvey Acaster and Miss D. M. Platts.

Hydro at Work

TRAFFIC LIGHTS



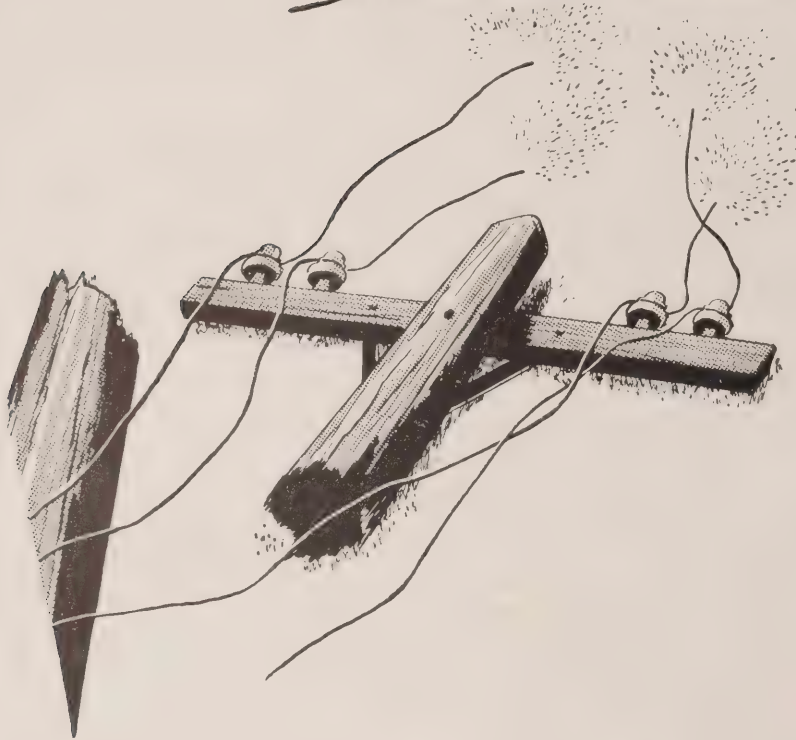
Remember the days when the policeman wheeled his semaphore into the centre of the intersection, lit the little oil lamp behind the red and green "stop" and "go" signs and with a whistle, directed the flow of traffic? Well, just as the old gives way to the new, this traffic control system has been superseded almost entirely by the modern electric traffic signals that are to be found at practically all busy intersections in the country where electric power is available.

The three-colour installations have red, green and amber glass in the lenses and are operated by a mechanical synchronizer which can be set for any pre-determined periods of time but usually 30 seconds on the red with the same for the green and a three-second light on the amber which overlaps the green. In some locations where traffic is heavy only at rush hours, the amber can be set for a flash of 60 times a minute and is used as a caution rather than a full stop. These stop lights were introduced in Toronto 18 years ago and at present they are in service at 140 intersections in the metropolitan area.

In addition to the mechanical timing device, they can be hand-controlled or set to allow traffic to flow without a stop at every intersection. In this case another electrical device looks after this progressive timing.



The only safe way . . .



Never touch a fallen Wire!

Wind, snow and sleet break down electric wires sometimes in spite of every precaution. Shock or severe burns can result from touching such a wire. Never touch a fallen wire.

Warn children not to go near fallen wires . . . but do not risk a demonstration by trying to move one out of the way. It can be fatal!

Remember these three things if you discover an electric wire on the ground or dangerously low:

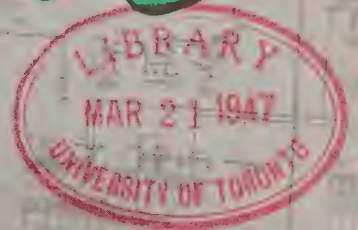
1. Do not touch the wire under any circumstances.
2. Stay on guard and keep everyone away until Hydro men arrive.
3. Have your nearest Hydro office notified at once.

Everything possible is done to keep Hydro wires safe in your community. Some things . . . winter storms and human folly . . . are beyond control. When these things occur, Hydro asks your co-operation in being careful and in warning others. By doing so you may save a life.



THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

HYDRO News



VER SUPERVISING



School

LIGHTING VITAL TO CHILD DEVELOPMENT

Above is a view of fluorescent lighting in an Ontario classroom. Note the three units above the blackboard, providing glare-free illumination of the board while lamps are completely shielded from student's eyes.

● Because school children are at the age of growth and development, it is extremely important that school lighting be adequate and well planned. The function of seeing for identification is only one of a total pattern of physical processes aroused when the eye is stimulated by light. We are apt to think of seeing as an independent process; but when light stimulates the eye, many bodily processes are set in action to keep the body's mechanics and chemistry in balance.

Any discomfort or strain resulting from inadequate light, reflections or glare, are likely to have an adverse effect on the total development of the child.

Either fluorescent or incandescent units can provide your school with good lighting. The search for improvement always continues. Nevertheless, you should make sure that you take advantage of the considerable knowledge that illuminating engineers already have on school lighting.

Consult Hydro's lighting engineers or any qualified illuminating specialist, for guidance in planning improved school lighting. Your local Hydro office will be glad to assist you.



THE HYDRO - ELECTRIC POWER COMMISSION OF ONTARIO

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CONTENTS

	Page
Alexander Landing - - - - -	2
Page Three - - - - -	3
Electricity In Medicine - - - - -	4
On Growing Older - - - - -	7
Hydro's Magic Mirror - - - - -	8
Dr. Thomas H. Hogg Retires - - - - -	10
Around The Hydro Circuit - - - - -	12
Going With The Grain - - - - -	13
Hydro Home Forum - - - - -	17
Napanee - - - - -	18
Feeding A Multitude - - - - -	20
Adequate Wiring Training Schools - - - - -	23
Hydro Assists University - - - - -	23
This And That - - - - -	25
Lighter Lines - - - - -	26
Hydro At Work - - - - -	27
Monthly Load Summary - - - - -	27
Municipal Loads - - - - -	28

THE FRONT COVER



FOR this month's front cover illustration, Hydro News caught one of Hydro's power supervisors in action just at a time when the morning power loads had reached their peaks. The supervisor is calling upon one of the reserve generators. Before him is the flow chart which shows the location of the generators and enables him quickly to decide where the additional power required can be obtained.





LOG CHUTES such as this one at Alexander Landing on the Nipigon river are to be found at various Hydro plants in country where timber cutting operations are carried on.

* Page Three *

SPRING

CANADIAN winters sometimes bring to our mind the story of the man who hired someone to beat him about the head for a length of time so he might experience the intense pleasure of relief when it was stopped. In other words, it is just possible that our winters are well worth the discomfort for the sudden tremendous release of Spring; and we can console ourselves through the dark, cold months with the thought that those who live in tropical climates will never know the almost painful joy of our first Spring days. Spring, here, is not the lingering affair it is in some more temperate countries. It is a few days of activity so intense that it is breath-taking to watch. The last snow is cornered and, seeing its doom, makes a hurried retreat, buds swell, grass begins to show colour, green shoots rise surprisingly from the hard ground, birds sing with shrill and unembarrassed ecstasy, the whole earth vibrates with a great surge of life and the warm, new sun seems to thaw all the aches and pains and disappointments out of our bones and hearts.

It is hard for us to express this fine, Spring-like joy of living. It is all very well for the birds and the poets but what are the rest of us to do when we are assailed by these feelings? Other ages and other peoples, less inhibited than ourselves, have donned their best finery and, giving themselves up to what might be termed scandalous abandon, have proceeded to celebrate the new season. But in these staid and sensible days what are we to do? To don a wreath of flowers and dance in the park seems hardly the thing and would certainly be frowned upon by the park authorities! No, as the spring sun sparkles and the buds burst we make the workaday compromise and with the "fine, careless rapture" well under control, we spend a noon hour buying a new golf club or possibly looking over the latest models in rakes and garden spades, before we hurry back to our offices.

HYDRO'S NEW BOOKLET

EACH year The Hydro-Electric Power Commission of Ontario publishes a comprehensive report on its financial standing and its operational activities. This Annual Report necessarily contains much statistical material, including not only the financial statements in respect to the Commission's wholesale services to the municipalities and its operation of the Northern Ontario Properties on behalf of the Provincial Government, but also the financial balance sheets and operating reports of the 300 urban municipal utilities.

Due to the fact that the financial year ob-

served by the municipalities ends two months later than that of the Commission, it is impossible, with all the revision and editing entailed, to make the Annual Report available until well on in the year following the twelve-month period to which it relates. Towards the end of the war, when extensions, consolidations and improvements of electrical services were being planned, it was decided to publish in booklet form, in advance of the Annual Report, a précis of its salient features. This, it was believed, would provide highlights of the progress during the calendar year. Copies of the 1946 booklet were available in time for the recent A.M.E.U.-O.M.E.A. conventions and a limited number are also available for interested organizations and individuals. The first of these booklets issued covered Hydro developments and planning during the year 1944.

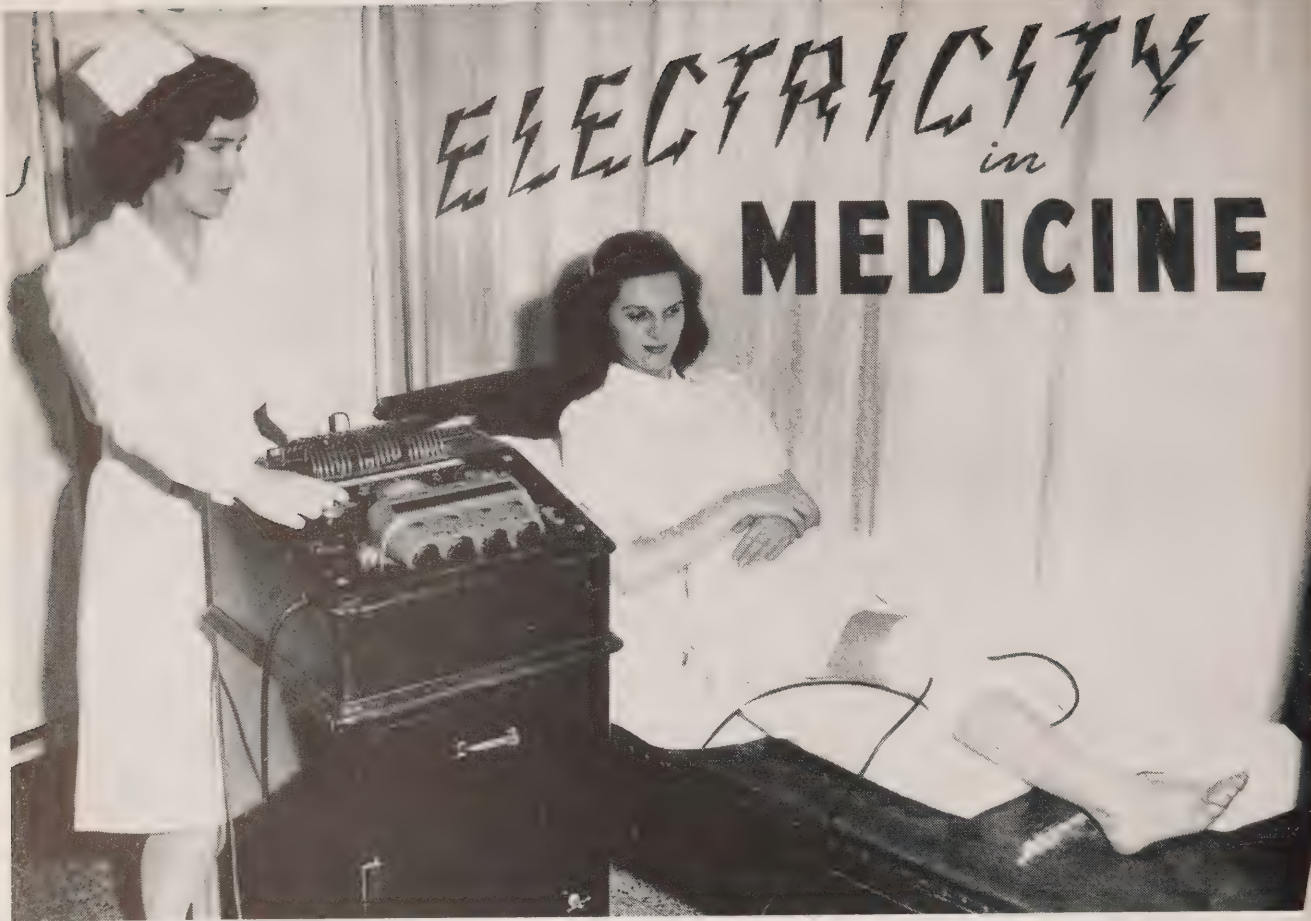
This year's booklet is of a convenient size and is attractively bound. Paper, illustrations and letterpress conform to the traditions of Hydro publications. The cover design is quite striking and symbolizes Hydro services from their planning, through power development, to consumer distribution. On the reverse of the cover and spotted on its purple ground is the well-known crest of the Commission.

HELP THE RED CROSS

NO organization in the Dominion was more prominently associated with wartime welfare work than the Canadian Red Cross. Most of the funds raised by the Society through voluntary contributions on former occasions have been exhausted in services rendered to members of Canada's armed forces and their dependents at home and overseas. The balance has been earmarked for the relief of war sufferers. Hence the necessity of the present campaign, with its objective of \$5,000,000.

Peacetime activities of Red Cross include a blood transfusion emergency service free of charge in all hospitals of Canada, the extension and maintenance of Red Cross outpost hospitals in frontier districts throughout the Dominion, assistance to the veterans of the war in recovering their place in the community and varied health and instructional services.

All these activities are urgently called for, and it has been left for Red Cross with its nation-wide contacts and perfected organization to carry them out. For the financial means, as it always has done, Red Cross confidently relies upon the generous support of the public. Subscriptions to Red Cross are, of course, welcome at any time, but the Society is anxious that the full amount of the objective of the present campaign should be raised by March 15 in order that the apportionment of the funds required for the various phases of its welfare work can be made without delay.



THIS "PATIENT" is receiving treatment in long wave diathermy which produces deep heat to help clear up a chronic inflammatory condition and relieve the pain. Toronto General Hospital.

By Mildred C. Redmond, Hydro News

Electricity not only drives our industry and turns our night into day, but it has many other roles, no less important for being on a smaller scale. Far from the least of these is the part it plays as a healer—as a valuable aid to the modern medical doctor in his task of alleviating suffering and curing disease.

The use of electricity for healing is not by any means a new idea. In fact, the story goes that the first cure was recorded some two thousand years ago by one Scribonius Largus who reported that a freedman by the name of Anthero stepped on a torpedo fish, received an electric shock and so was cured of the gout! Many ancient writers recommended this practice of receiving beneficial shocks from either the torpedo fish or the electric eel as a cure for headaches. And, indeed, this method was in use as a cure for fever, among the Arabs as late as the 19th century.

Those interested in the art of healing

were not slow to see the possibilities in electricity when it was still in its early experimental stages. After Faraday invented the induction coil in 1831 the first practical application of electricity for healing was introduced. As with any new device, physicians, laymen and quacks all turned their attention to the new "cure-all" and it was recommended for practically everything. The next stage, naturally, was that it fell into disrepute. The truth, as always, appears to lie somewhere in the middle. For certain conditions, electrical treatment has been found to be very helpful and valuable, and modern research is all the time extending its field. Nowadays it is used in diagnosis, in medicine, in physical therapy and in surgery. The physiological therapeutic effects of electricity are the consequence of chemical or physical changes it brings about in tissues and can be explained by known natural laws.

At present the discussion will mostly concern the work done under the heading of electric therapeutics.

Electricity for treatment is employed in

the form of electromedical currents such as the galvanic, faradic, short wave and high frequency which are practically all derived from the commercial current by changing it by a variety of devices. According to their strength, volume and frequency, these currents affect body tissues.

The Galvanic Current

The oldest form of therapeutic current is the galvanic, which corresponds with commercial "direct current." When applied to the body this current exerts mild stimulation through ion migration. It can be used for a variety of ailments. It is used for relief of pain and it helps change circulation in diseased areas. Ionization, the introduction of therapeutic ions into the body, is helpful in the healing of, for example, skin ulcers. Medical ionization by the galvanic current is based on the elementary law of electro-physics, that bodies with unlike electric charges attract each other while those with like charges repel each other, so that medicinal substances can be introduced in "ionic" state into the skin or mucous

(Continued on page 6)



SHORT WAVE treatment, in this case for acute sinus inflammation. The deep heat brings relief and helps clear up the condition. Toronto General Hospital.

DIPPING HER hand in warm melted wax is one way this "patient" is seeking relief from an arthritic condition. This is not an electric treatment but the wax bath is electrically heated and thermostatically controlled. Toronto General Hospital.



NOVACAINE to kill pain (lower right) and assist recovery has just been introduced in "ionic" state right into the injured leg of this patient, by a galvanic direct current. Workmen's Compensation Board



INTERRUPTED GALVANIC current is being used here for muscle stimulation after nerve injury. Toronto General Hospital.



WHEN THERE is persistent swelling in a leg following an injury, a faradic pump can be used. Here an interrupted faradic current is being run through the leg under a tight pressure bandage. Workmen's Compensation Board.



ELECTRICITY IN MEDICINE

(Continued from page 4)

membranes from a pole of the opposite electric charge. Such treatment is used for a variety of chronic inflammations, in some forms of arthritis and rheumatic conditions and with sluggish ulcers. The drugs commonly introduced in this way are novacaine to ease pain, histamine, which produces localized increase of circulation, also iodine for low grade infection.

An important use of the galvanic current is the stimulation of muscles when there is no motor nerve supply. This is used widely after any sort of accident where there have been nerve lesions. Especially in the aftermath of war there will be hundreds of cases where this treatment can speed recovery. To take a common example—a soldier has a gun shot wound, say in the upper leg. The nerve has been injured and it will take two years at least until the nerve has grown again sufficiently to innervate the muscles of the leg. The problem here is to maintain as much muscle function as possible until the normal nerve impulse returns. If left untreated, the muscles will tend to lose life, and recovery is long and tedious. Electric muscle stimulation greatly aids final recovery by keeping the muscles able to contract so they don't lose the ability.

Low Frequency Currents

The faradic current, a low frequency alternating current which contracts muscles where the motor nerve is intact, is used for both testing and the treatment of weak muscles. To consider a typical case: a middle aged woman has suffered a bad fracture dislocation near the shoulder. When the plaster is taken off, the joints are stiff and there is very little movement in the elbow or fingers. The whole arm is badly swollen from being in the plaster. The low frequency muscle stimulation may be used to aid the return of muscle sense, that is to re-establish telephone connection between the brain and the muscles around the injury. This starts up muscle function more rapidly and so speeds up recovery and the restoration of tissues to their normal size. If there is persistent swelling, say in the leg, following an injury, a faradic pump can be used. In this case, the leg is elevated and a pressure bandage is applied with an electrode at each end. A surged faradic current is run through this, which causes the muscles to contract; because of the pressure bandage and the elevation of the leg, the extra fluid that has been causing

the swelling has no alternative but to be pressed out of the leg when the muscles contract. Stubborn cases treated in this way often show a marked improvement in a week or ten days.

Uses For High Frequency

Possibly the most widespread use of electricity in treatment is in the high frequency currents, both long and short waves. According to history, the therapeutic use of high-frequency currents was first suggested by Nikola Tesla in a paper published in 1891, in which he noted that currents of high frequency were capable of raising the temperature of the living tissues without other obvious physiologic effects. The following year d'Arsonval demonstrated that high frequency currents could be used for the coagulation of proteins. The application of these currents developed rapidly and was given the name diathermy. The apparatus was originally a spark-gap oscillator generating a series of damped oscillations. With the development of vacuum tubes, tube oscillators came into use, employing a wide range of frequencies.

High frequency currents do not excite muscle and nerve tissue; their oscillating energy is simply transformed into heat energy along the path of the current which can be employed at a much higher volume because of the absence of shock. There are two forms of medical diathermy: oscillations of about one million frequency are used with metal electrodes directly applied to the skin and are known as long wave diathermy, while oscillations of a frequency of ten million or more can be employed with the electrodes an inch or more apart from the skin and are known as short wave diathermy. There is no particular difference between them in clinical effect. The short wave is the most commonly used, but both are primarily tissue-warming agents. Short wave can be specifically used in deep-seated chronic inflammatory conditions in the joints, bones and inner organs when the wave length is less than 15 metres. Inflammation is the greatest offender in producing pain so that the short wave treatment often brings relief. One example is acute sinus inflammation and another, pus infections of the skin.

High frequency currents are used in both medicine and surgery. Electro-surgery will be discussed later in more detail. As well as in actual surgery, the high frequency current is used in certain cases to cauterize. A case history gives us the record of a labourer who had to

have a finger amputated following an accident. After the amputation he had a great deal of pain and his hand was so useless he could not return to work. The reason for this was a small bundle of nerve endings or neuroma protruding from the amputation. This nerve ending was cauterized and the result was an almost immediate "cure" and the full use of the hand again.

Light Therapy

Light therapy is another interesting branch of electrical medicine. Most people nowadays are aware of the benefit of the ultra-violet rays in cases of general debility, popularly known as "that tired feeling", or for certain minor skin complaints. Less well known and considerably more spectacular is what the ultra-violet rays can do, for instance, to deep ulcers in tuberculosis of the skin. History records that back in 1896 a Danish doctor, Dr. Niels Rydberg, discovered that "violet" rays are an enemy of disease. He experimented on a man who had a terrible running sore covering half his face from skin tuberculosis. He had been told that there was no cure. Dr. Rydberg had him go to an electric-light plant in Copenhagen and for some months sit for two hours daily under the hot blue rays from an arc lamp concentrated through a lens. It was an ordeal but the ulcer gradually closed in and was replaced by healthy skin. This cure caused a sensation among the medical profession. Since then the nature and the effect of the light have been more accurately defined and new cures are constantly being found.

The infra-red is another of the commonly-used light rays. It is a heat ray and is used for the relief of pain, also to improve circulation. Sometimes arthritic and rheumatoid conditions respond to it. It is also used in cases of severe chilling and exposure.

Tribute to New Science

These are only certain representative uses of electricity in the medical field. A few years ago the New York Times had this to say in one of their editorials: "Many of the men who practise the new electrotherapeutics are so well grounded in physics and electrical engineering that they have made striking technical improvements. This new science needs their combination of electrical and medical knowledge. Medicine today belongs to the chemist, the electro-therapist, the bacteriologist and the radiation expert."

Electricity In Medicine Chapter II will follow in the next issue.



DR. R.W.I. URQUHART MEDICAL DIRECTOR

ON GROWING OLDER

Medical men have the habit of using big words to define ideas. For example, the specialized medical care of children is described as Paediatrics; similarly the specialized medical care of the aged is called Geriatrics.

In this article I wish to discuss some of the stages that lie between these two extremes, and in particular the point at which the aging process begins to make itself felt. For this period there is no specific term. While in one sense the process of aging may be said to begin at birth, it is overshadowed in the first two decades by the processes of growth and development. In the earlier years these proceed at a terrific rate. A child doubles its weight in the first six months and trebles it in a year. It is fortunate that this initial rate does not persist throughout life or humans would be monsters indeed. By the end of the second decade, growth has almost stopped. As adult life begins, the bones become hardened and fixed and little further change can take place.

During the next two decades or so—the period of manhood or womanhood—the individual remains fairly static from a physical point of view. The aging process, while moderately active, has not yet picked up speed. Man at this stage is at the peak of his physical and mental powers. Strength and energy are at their maximum. Strain and fatigue are readily overcome. Provided accident or illness do not occur, there are practically no limits to what may be accomplished. It is toward the end of this period that the aging process begins to make itself felt. The precise point at which this occurs varies with the individual. It depends upon a large number of inter-related factors, only two of which will be mentioned.

One of the most important of these factors is that of heredity. Just as John

or Mary may "take after" one or the other side of the family, in stature, expression or appearance, so may they inherit certain other characteristics relating to the quality of the tissues of the body. Thus the individual may begin life with a poor nervous system or heart, or blood vessels not up to standard. As a result, these organs may not stand up well to the ordinary stress of living, and thus the individual may tend to age at a relatively early date. On the other hand, heredity may be kind to the individual and provide him with better than average body material. In this case, the aging process may not make itself apparent until a relatively late date. One has, I am sure, seen examples of both these types.

The second factor in aging, is the presence of damaged organs, the results of the disease in early life. Certain of the infectious diseases common in childhood have been responsible for much of this damage. Heart, lungs, ears, kidneys, etc., so damaged age rapidly. Fortunately this factor is not as great in this generation as in preceding generations. The introduction of such measures as water treatment, sewage disposal, vaccination and preventative inoculations of various sorts, has almost eliminated many diseases. Typhoid fever, small pox, diphtheria, scarlet fever, etc., were the scourges of former generations and were responsible for much persisting tissue damage. At the present time they occur rarely, and when they do, are usually in a mild form with no serious after-effects.

Symptoms Relatively Trivial

Sooner or later then, in the late forties or early fifties, this aging process may be forced on one's attention. The symptoms may be relatively trivial. It may be noticed that the printing in the new telephone book is not as good as it was in the old one, or as one dear old gentleman

often complained, "People seem to mumble these days, they do not speak clearly." Fatigue may be produced more readily. A series of late nights or exceptionally heavy days at the office or in the field, may result in an unaccustomed "tired feeling." Even the usual eighteen holes of golf at the weekend may seem just a little too much. The usual business problems and strains ordinarily taken in one's stride, may suddenly produce sleepless nights and irritable mornings. These are forewarnings that the aging process is speeding up. They must be recognized as such.

Little can be done to halt the process. It is inevitable. The most that can be done is to learn to live within the limitations imposed by it. The things that were done at twenty, cannot be done at fifty with impunity. Increased rest is usually necessary. This does not mean that the individual should avoid all exertion and live an increasingly sedentary life. If he has been accustomed to exercise or hard physical work there is no reason why this should not be continued, provided he does not become exceptionally tired. Any exercise that is comfortable is usually harmless and is probably beneficial. The thing that is harmful is the excessive physical exercise that some people take over a weekend, or in the Spring months after a Winter of extremely sedentary living. The man who, at this time, goes out and plays thirty-six holes of golf on Sunday or attempts to show the young fry how baseball or rugby should be played, is inviting trouble. So is the amateur gardener who in the Spring spends long hours at strenuous work in the garden after a Winter of physical inactivity. It is the sudden change from inactivity to overactivity that is harmful. Moderation in exercise as in all other phases of life, should be the motto of those who wish to enjoy a successful passage through this particular stage of life.

HYDRO'S MAGIC MIRROR

By **Harry M. Blake,**
Hydro News

Up on the eighth floor of Hydro's Administration Building on University Avenue in Toronto is a room—and not a very big room at that—where all the activities of the people of Ontario associated with the use of electricity are reflected as if in a magic mirror. Here, for those who can read the language of the power loads, are recorded the time folks get up in the morning, the rush hours when they struggle to and from work, the types of business or industry in which they are engaged, the times when they do their washing or prepare their meals, and even the kind of recreation or amusement which appeals to them in the evening.

From a power supervision point of view, this room is the hub of Hydro's Southern Ontario System. When everything is running smoothly, the work there is routine. A small but very experienced staff, working in relays during the 24 hours of the day, read meters and study graphs, noting how the output of every Hydro generating station is being taken up and checking the distribution of power loads to the municipalities and other wholesale consumers. At all times, however, the supervisory staff must be prepared for sudden changes in load pattern. They must endeavour to anticipate these vagaries so that electrical services can be adjusted with the minimum of inconvenience to consumers.

The foundations for the routine part of this supervision are provided by a long term estimate of power needs. This takes into account power required to supply municipalities and some large industrial customers as well as rural requirements. Consideration is given to normal seasonal and daily fluctuations in power demand, and the possibilities of diverting power from one area, or from one class of consumer to another so that available power will be in use at all times.

Further day-to-day checks are made on load conditions and compared with long range estimates. Occasionally contingencies arise requiring adjustments in original plans in order to take care of emergency situations. On this basis the whole Hydro system is attuned to respond automatically to the load demand.

Anticipating Emergencies

Such advance analyses cannot, however, anticipate sudden variations in power load patterns. These must be attended to without delay as soon as they cast their

warning shadows in the power control room. It is the responsibility of R. M. Laurie, the Commission's power supervising engineer, to see that they are fitted into the general power load scheme without too great a tax upon any particular generating units.

How this is done can perhaps best be illustrated by analogy.

On summer evenings people are accustomed to water their gardens. After an extremely hot day a more ample supply of water will be required than on ordinary occasions. As more and more hoses are

turned on, the streams and sprays will fall shorter and shorter of their objectives—unless more pumps are brought into action by the city's waterworks department. In view of the weather, the emergency will, of course, have been anticipated and provisions made accordingly.

In principle, this bringing on of more pumps is what the power supervising engineer is called upon to do when a sudden increase over the normal use of electricity is anticipated for any particular area at any hour of the day or night. Frequently, this may mean just bringing



CHECKING THE output of Hydro's Queenston plant, R. M. Laurie, the Commission's power supervising engineer, is shown with C. R. Hicks. Other members of the power supervising staff are H. Whittaker, V. Wilson, A. F. Ferguson, L. A. Teal, G. S. Thomson, E. H. Pogel and F. J. Hand.

back into action one or more generators which have been cut off at the plant which normally services the area. If, however, the emergency occurs at an hour when all the generators which supply power to the locality are responding to peak load demands, other "sleeping" generators, sometimes in far-distant plants, will have to be awakened. Hydro operators are constantly on the alert, watching for changing conditions. If, as at present, material shortages delay the construction of plants to meet increasing demands for power, it then becomes necessary to make the best possible use of existing facilities, and the distribution of

power is arranged accordingly.

Complete Information Needed

To obviate the possibility of any trouble, Mr. Laurie and his assistants must be in possession of complete up-to-the-minute information on the conditions at every generating, transformer and frequency-changer station in Hydro's Southern Ontario System. Preferably a little in advance, but, if necessary, at a moment's notice, they must know exactly where to look for power to meet any emergency.

Usually, there will always be periods

during the day when the generating capacity of the system is not fully enlisted. At these times certain generating units remain cut-off by the closing of the turbine control gates. The units so dealt with are naturally those which are less efficient in the use of water, and the rest-up given them is of material assistance in maintaining reservoirs and headponds at required levels. It takes only a few moments to bring the laid-off generators back into service, but the power supervisors must know just where they are when they want them.

What Causes Emergencies?

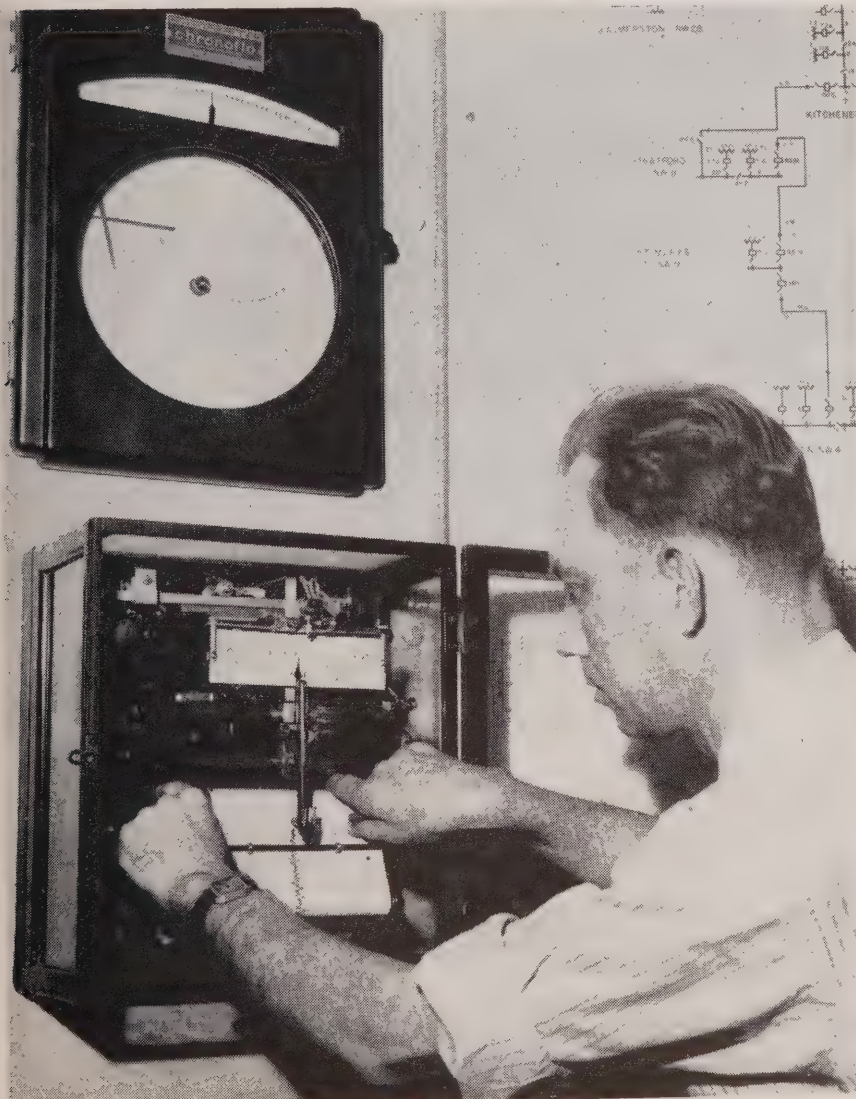
Weather is the most frequent disturber of the smooth flow of power loads. So the Meteorological Bureau furnishes Mr. Laurie with a special five-day forecast of all the tricks the weatherman has up his sleeve. This forecast may suggest all kinds of possibilities. First of all, if there are going to be dark and stormy days ahead, that means people will be using a good deal more electricity for lighting. In Toronto, on a recent occasion, when a sudden storm turned day into night, there was an increase in the load of 75,000 kilowatts above normal. This storm occurred in the summer time and was quite unexpected. In the winter emergencies occur much more frequently and the problems of the power supervisors are multiplied. For instance, on a winter evening the lord of the manor may arrive home to find the snow drifted high in his driveway. He has to clean it off after supper, and that usually means another meal before he goes to bed. Hundreds of electric stoves make quite a pull on power. And then there is always the chance that high winds, ice, sleet or snow—whatever the capricious Storm King of these latitudes decides to turn on—may affect actual generation of power. This would, of course, handicap plants in meeting normal load requirements, not to speak of emergency demands.

High winds can occasion serious generating losses to the power plants at Niagara. A stiff easterly blow will pile the river back on Lake Erie, while a westerly gale will scoop the water past the intakes. In either case, it means trouble.

Then there is ice. It comes in all kinds of shapes and formations and has the nasty habit of getting into forebays and putting the hydraulic machinery at the headworks out of commission.

Particularly troublesome in some localities is the ice known as "frazil." As it forms in the body of the water and not close to shore or on the surface of the river, its appearance in the shape of minute needles cannot readily be detected.

(Continued on next page)



ONE OF the important duties of Hydro power supervisors is the control of frequency, which must be maintained within a narrow fractional tolerance. Here L. A. Teal is setting the chart so that the time of any inadvertent deviations of frequency will be accurately recorded.

HYDRO'S MAGIC MIRROR

(Continued from previous page)

Its occurrence is generally at the approach of winter when the temperature of the water has fallen only slightly below freezing. Turbulent conditions prevent it from consolidating until it strikes some colder solid body. It has a peculiar affinity for "cold steel," and when it comes in contact with the screens and racks at the head-works of power plants, it consolidates with astonishing rapidity. The massing of frazil at the headworks naturally reduces the waterflow to the turbines and consequently lessens the output of the generators. In recent years this treacherous enemy has been successfully combatted at many stations by the removal of the screens. The frazil ice is then permitted to pass freely down with the water to the turbine wheels. As these are in constant motion and usually maintain a temperature above the freezing point, the frazil is unresponsive to their embraces.

The effect of sleet in bringing down transmission lines and thus cutting off generation was manifested during the recent winter storms in the Hamilton area. Lightning, too, can be quite destructive.

So Mr. Laurie and his alert little staff must always keep an eye on "what's cookin'" in the weather pot. But weather reports are not all they need to keep power supplies tailored to requirements. At all times they must know what power they can lay their hands on to meet any emergencies and where they are going to get it.

Sources For Emergencies

Three kinds of power are specified in Hydro contracts—"firm" power, "interruptible" power and "at will" power. There must be no interference with the supply of "firm" power, but the Commission, in its contracts, reserves the right to cut off "interruptible" power at certain hours. "At will" power may be denied to the consumer at any time. It may be looked upon as a sort of luxury surplus to be used when plenty of power is available and everything is going smoothly.

At the present time, owing to the incidence of the war and to many other unforeseen conditions which have retarded power developments and construction, the Commission has no "reserve" power. The shortage of power this winter has been met by voluntary savings on the part of Ontario citizens and by the Commission exercising contractual rights with heavy power areas. Adjustments have been effected on carefully-planned

DR. HOGG RETIRES AS CHAIRMAN: TO ACT IN CONSULTING CAPACITY

Guest Of Senior Staff Members At Luncheon — Presentation Made By Hon. George H. Challies, Vice-Chairman Of The Hydro-Electric Power Commission Of Ontario

Upon his retirement on pension as chairman, a position he held for 10 of the 34 years he was identified with the Commission, Dr. Thomas H. Hogg was the guest of senior members of the Commission staff at a luncheon on February 28 when he was the recipient of a handsome silver cigar humidor.

In making the presentation on behalf of the Commission and staff, Hon. George H. Challies, the vice-chairman, stated that the Commission was happy to announce that Dr. Hogg would continue in a consulting capacity in connection with the proposed frequency standardization and the power developments now

under construction, particularly the developments on the Ottawa, St. Lawrence, Nipigon and Niagara Rivers.

In reply, Dr. Hogg stated that he was pleased to continue his association with the Commission and staff after a period of 34 years, and that he looked forward to many pleasant years of close association with the staff with whom he had worked. He added that he was leaving immediately for a holiday and thanked the Commission and Department heads for their sincere good wishes.

Those present included: Hon. George H. Challies, vice-chairman; commissioner W. Ross Strike, K.C., Osborne Mitchell, John Dibblee, R. L. Hearn, R. T. Jeffery, J. V. Walters, A. McPherson, M. J. McHenry, A. H. Hull, Wills MacLachlan, H. W. Beck, A. G. Hall, David Forgan, H. J. Muehleman, W. P. Dobson, S. W. Johnston, F. A. Robertson, J. J. Jeffery, C. Carrick, A. W. Manby and Dr. O. Holden.

schedules so as to occasion the least possible inconvenience to any consumer. Each industry has been treated on a pro rata basis. Every consumer is being given all the power that can be given him consistent with an equitable division.

There are, of course, times during the 24 hours of the day when factories are closed down, or, at least partly closed down, and there is thus an opportunity of "cadging" some "interruptible" or "at will" power even during a power shortage. Mr. Laurie and his assistants can only hope that emergencies will restrict their occurrence to these comparatively favourable periods.

Communications

A big chart in the power control room shows the link-up of the entire Hydro Southern Ontario System and its connections with certain generating plants east of the Ottawa river which supply power to the Commission under purchase contracts. The generating stations, the transformer stations, the frequency-changer stations and the focal points from which wholesale power is supplied or can be supplied are all shown. The chart is, in fact, a ready reference map, providing a background for the communications received and the instructions given.

Communications are received in various ways, which may be summarized under the heads of telephone calls and visual in-

dications, or telemetering. The visual indications are particularly concerned with the control of frequency. They come from the Queenston and Chats Falls plants, which are frequency regulating stations for the Southern Ontario System, and are transmitted to a convenient central location whence they are relayed by cable to the power control room. The Commission is now planning to provide meters for the power supervisors which will record the individual generation and certain other conditions at every generating station in its Southern Ontario System, thus completely unifying control.

Telephone communications are carried on over a set-up which provides for several frequencies so that the calls from the power supervisors or to them will not be held up or interfered with by calls from other departments. A very efficient communications system on a similar basis is in process of development between stations.

Information as to what is going on everywhere in the Hydro System with regard to power loads is gathered up by designated sub-dispatching centres and immediately passed on to the power supervisors. This is supplemented by the telemetering, so that the supervisors know in detail all the conditions affecting power supply and are in a position to apportion loads accordingly at any hour of the day or night.

PRESENTATION MADE TO DR. HOGG AT COMPLIMENTARY LUNCHEON



DR. THOMAS H. HOGG, who has retired as chairman of The Hydro-Electric Power Commission of Ontario, is shown (upper centre) with Commissioner W. Ross Strike, K.C., on his right, and Hon. George H. Challies, vice-chairman, on his left. Dr. Hogg is holding the handsome and beautifully engraved silver cigar humidor which was presented by Mr. Challies on behalf of the Commission and senior members of the staff (below) who attended the complimentary luncheon in the Royal York Hotel, Toronto, on February 28.



CHAIRMAN AT NAPANEE



WILLIAM THOMPSON MacKENZIE, chairman of the Napanee Public Utilities Commission, was born at Rosseau, Muskoka, in November, 1889. Mr. MacKenzie has been chairman of the Napanee commission since 1938, and prior to that time he was a commissioner for five years. He was also alderman from 1928 to 1929.

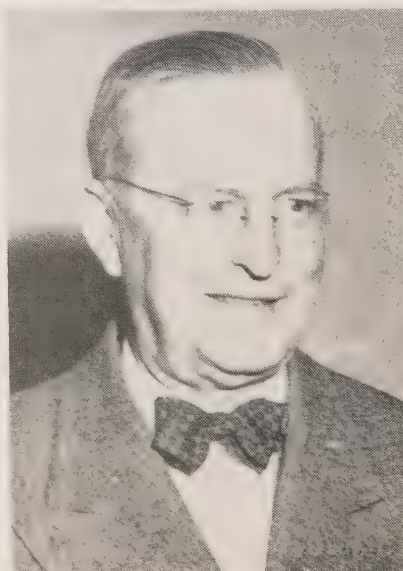
His school days were spent at Gravenhurst and Toronto, having attended the University of Toronto and later, he graduated from the School of Pharmacy. At the present time he has his own drug store in Napanee.

During the First World War Mr. MacKenzie spent four years overseas with the 123rd Battalion. While at school he went in for the strenuous sports of lacrosse and hockey, and now he has turned to the more leisurely, but none the less enjoyable game of golf and is past president of the Napanee Golf Club.

MANAGER AT NAPANEE

Quiet spoken and friendly, **CHARLES AUGUSTUS WALTERS** has an extensive background on Napanee's electrical history, having been associated with the district in the capacity of manager for the past forty-two years.

Back in 1904 when Mr. Walters became manager of the Napanee Electric Light plant, he supervised the building of a steam plant. This plant continued in operation until 1912 when it was purchased by the Seymour Power Company, who in turn operated it until 1916 when the H.E.P.C. took over. The Commission continued the operation until



1930 when the system was purchased by the Napanee Public Utilities Commission, who have been looking after it ever since.

Throughout the various ownerships, Mr. Walters has continued in his present capacity of manager and is still very much on the job.

Born in Napanee on January 13, 1879, he attended public and high schools


MAYOR CHALK



Mayor **GEORGE SYDNEY CHALK** is a comparatively new member to the Napanee Public Utilities Commission, having just recently been elected mayor. He is well acquainted with municipal affairs, however, having served as alderman from 1941 to 1945.

Born at Marlbank, Ontario, in December, 1898, he attended public and high school at Tamworth, Ontario. During the First World War he served four years overseas in the Infantry. In the business world he is known as a well drilling contractor.

When not engaged in Hydro affairs, he takes a keen interest in the Rotary Club and was elected president for 1946-47. He lists power boating as one of his hobbies and proudly boasts that he assists in "raising" his two wonderful grandsons.



Going With the Grain

By W. Ronald Mathieson
Hydro News

Symbolic of Canada's greatness in fields of grain production and processing are the giant elevators, whose massive, fluid structures tower high above the waterfronts at the head of the lakes, and in Toronto and elsewhere, also reflect the genius of man in harnessing electricity to speed the flow of foodstuffs to domestic and foreign markets.

From the time the seed is planted until the grain reaches its ultimate destination there are literally hundreds of stages through which it must pass. Each stage contributes something vital to the economic picture. The farmer, the elevator man, the miller, the exporter, the foreign importer—each is indispensable to the complete picture and, in turn, each helped in making his job easier, faster and more economical by the use of electricity.

Recently, Hydro News visited a giant terminal elevator that not only stores grain but processed it as well. It just happened that there was a freighter from the head of the lakes and so we had the opportunity of forming some interesting impressions of what goes on inside one of these mysterious looking structures.

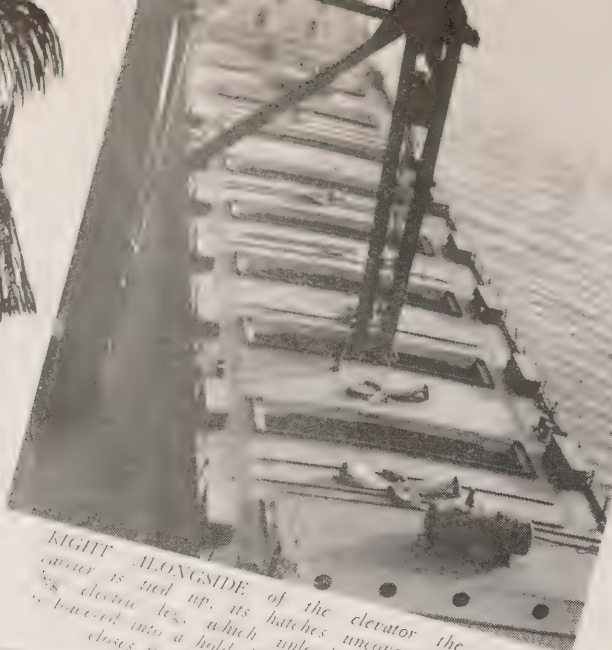
Grain is shipped on a freighter in two ways, in bulk or in bags. As the board is divided into compartments, only one hold can be conveniently unloaded at a time. This is accomplished by means of a gigantic leg, which is a metal structure that embraces an endless belt of half-bushel scoops. When the leg is lowered into the ship from the side of the elevator, the electricity is switched on and the grain is scooped up and carried to the very top of the silo part of the elevator.

Wear Masks and Goggles

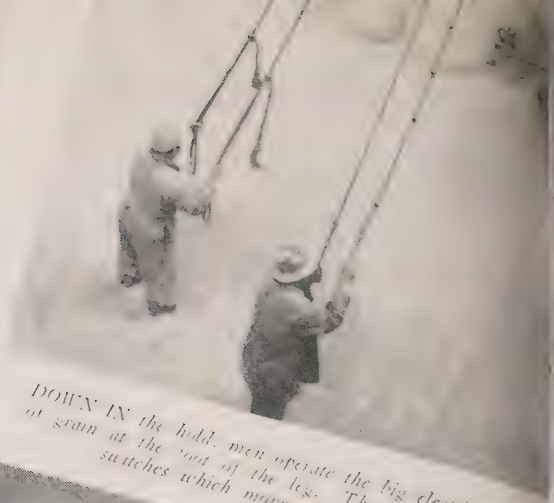
In order to keep the grain in the hold in a pile at the base and thus ensure a steady flow up the shaft, huge shovels, powered by electricity and controlled by advance and reverse timing motors, are operated by deckhands who are on the job supervising the operation. Dust from grain is heavy and penetrating and, therefore, masks and goggles are worn by the men. As there is always a danger of fire or explosion, smoking is taboo.

If the power is cut off for any reason there is a magnetic brake which prevents

(Continued on page 16)



RIGID ALONGSIDE of the elevator the grain carrier is tied up, its hatches uncovered, and the electric leg, which unloads the grain cargo, is lowered into a hold. The official navigation season closes in December and opens in April.

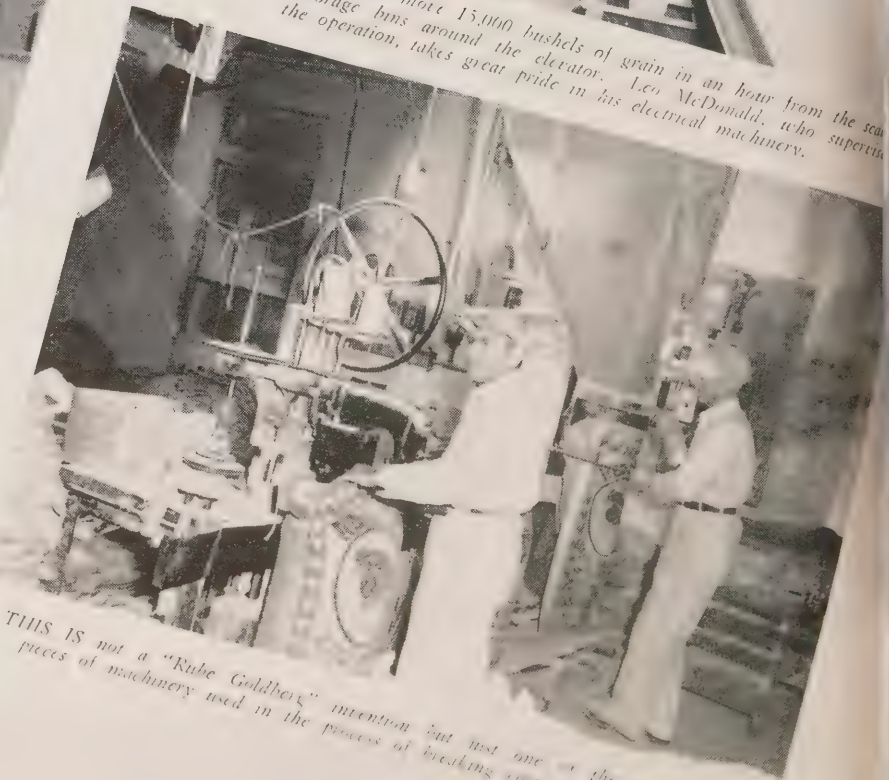


DOWN IN the hold, men operate the big electric scoops that scoop up grain at the foot of the leg. The ropes held by the men are attached to the scoops which move the scoops either forwards or

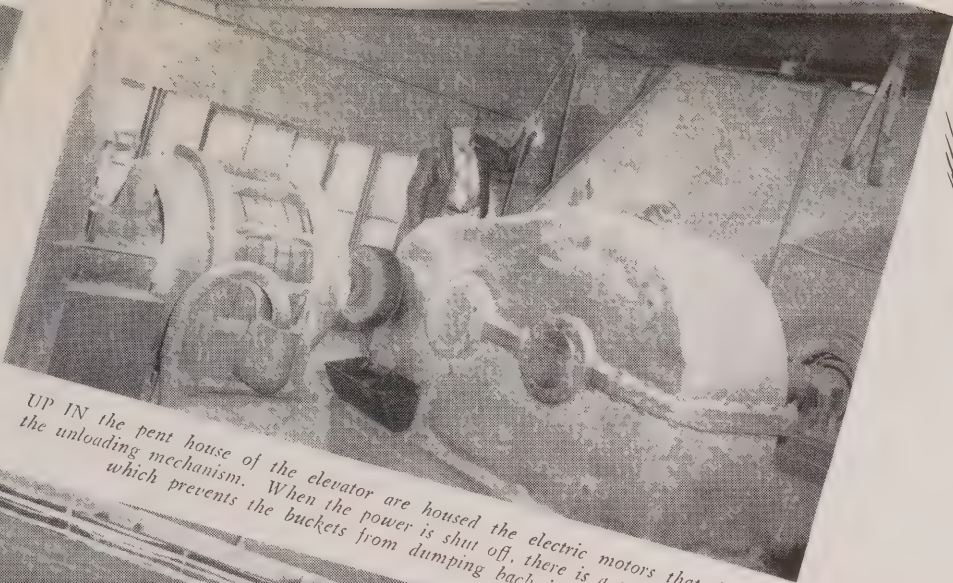


THESE CONVEYORS move 15,000 bushels of grain in an hour from the sea to different storage bins around the elevator. Leo McDonald, who supervises the operation, takes great pride in his electrical machinery.

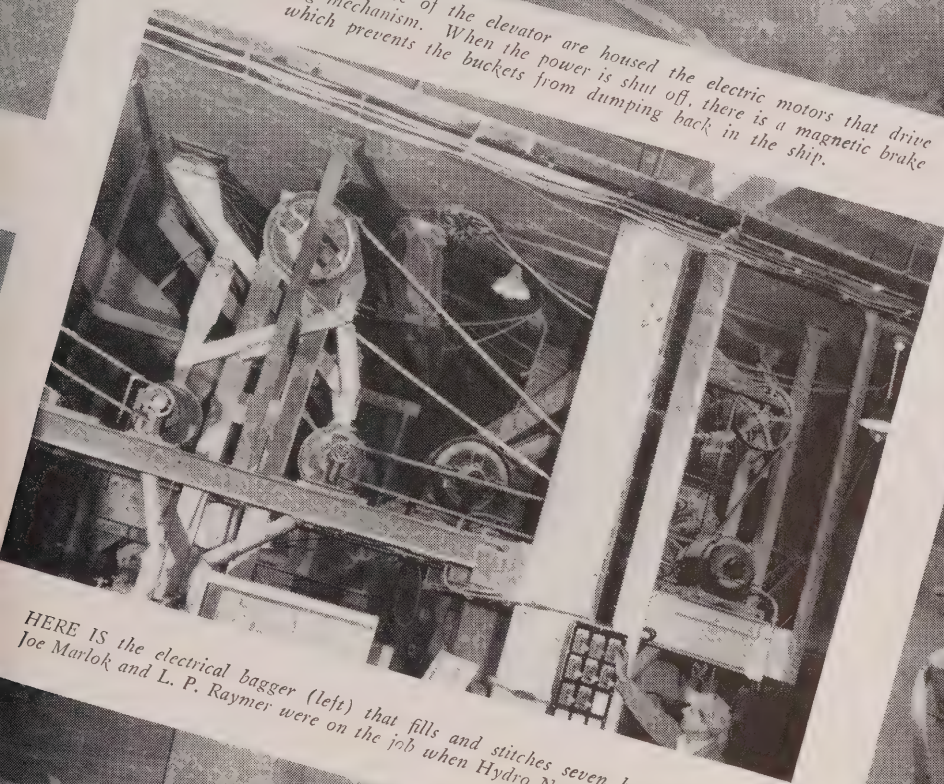
TAKEN The grain was being in the elevator. The men were working with their hands on it. The grain was being taken out of the elevator. The men were working with their hands on it. The grain was being taken out of the elevator. The men were working with their hands on it.



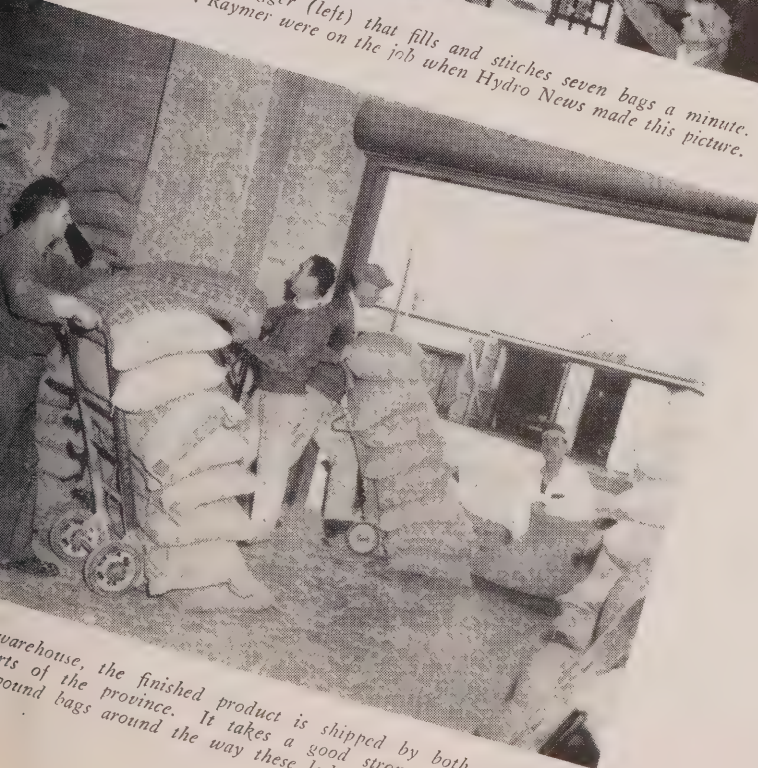
THIS IS not a "Rube Goldberg" invention but just one of the complicated pieces of machinery used in the process of breaking down grain into flour.



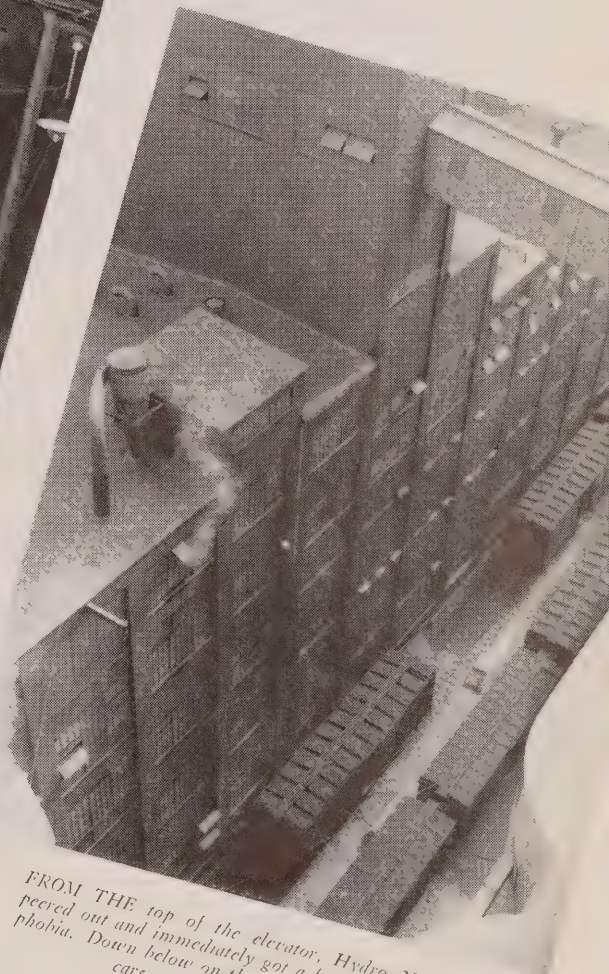
UP IN the pent house of the elevator are housed the electric motors that drive the unloading mechanism. When the power is shut off, there is a magnetic brake which prevents the buckets from dumping back in the ship.



HERE IS the electrical bagger (left) that fills and stitches seven bags a minute. Joe Marlok and L. P. Raymer were on the job when Hydro News made this picture.



warehouse, the finished product is shipped by both rail and
ports of the province. It takes a good strong back to sling
round bags around the way these lads can handle them.



FROM THE top of the elevator, Hydro News peered out and immediately got a feeling of acrophobia. Down below on the siding several freight cars were being loaded.

GOING WITH THE GRAIN

(Continued from page 13)

the weight of the loaded buckets from reversing and dumping back into the hold.

Up in the loft of the elevator, the grain is dumped into a huge funnel in which is built a scale that weighs the grain. In this way the shipment can be totalled and, at the same time, a tally on the inventory can be kept.

Jack Gair of the Toronto Elevators Limited, who looks after this particular job, told Hydro News that 15,000 bushels an hour can be unloaded and weighed. It was here Hydro News met Elmer, a crippled pigeon, sitting on the balance bar where he posed for his picture.

Allocated To Bins

After the grain is weighed, it is allocated to bins where it is stored with a similar grade and quality of stock. In order to make this move, endless belts of a rubber texture shoot the grain to the bins at the same speed with which it unloaded—15,000 bushels an hour. This prevents any bottlenecks along the line. These belts are controlled by hand switches, but each floor has a master station where fuses and junction boxes are housed.

As the dust hazard is universal around an elevator, all the lights have special dust and moisture-proof globes which do not impair the intensity of the light. The same factor applies to electric housings on motors and boxes. They are sealed and, at the same time, allow a certain circulation of air to keep them from overheating.

Milling Processes

In general, milling processes may be divided into two parts, first cleaning and conditioning, and secondly, separating the husk from the kernel. With different grains, this principle may be altered depending upon the desired product.

However, it is not quite so simple as it would appear on paper; actually, it is a very complicated process. From the economic viewpoint, the amount added by milling to the value of the raw material is the measure of work involved.

In cleaning grain or seeds of every shape and size, stones, chaff, straw, dust and dirt must be extracted. The first step in this process is the use of sieves. Holes, smaller or larger than the grain, usually sift out the more obvious foreign matter. These sieves are vibrated by electric motors which produce a shaking motion, while air blown on the grain when it is on flat tables removes the dust particles.

Conditioning, or tempering as it is called in Ontario, refers to the pre-husking operation which prepares the

grain for the removal of the kernel from the husk. In this process, water is either added or extracted from the grain, depending on its grade and the moisture content at the time of the operation. Again, this is very general and the actual process hinges on what the miller wants in his finished product.

Until about sixty years ago, most milling was done by using big mill-stones which were powered by hydraulic water wheels located usually on the romantic "old mill stream." That method was satisfactory at the time, for the wheat was of a variety that had a soft friable skin. When special wheats, that were rust-resistant and more suitable for our climate, were developed in Canada it was found that they had a harder skin and the action of the stones was crushing and not gentle enough.

Then too, with the introduction of electricity to the milling field, more control of speed and pressure could be obtained without waiting for the spring flood to produce a pressure head of water.

Face Of Roller Corrugated

At the present time, roller mills are almost universally used in modern grinding. A pair of cylindrical rollers, running in the same direction nip and grind the feed at one point. This does not produce an undesirable crushing of the grain, as the electrical process is designed to have one roller going faster than its mate. The grinding face of the roller is corrugated, and on some mills, the flutes are cut at non-parallel angles to the axis of the rollers.

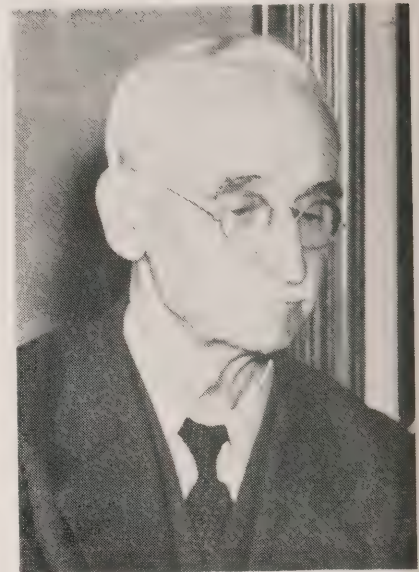
As the miller grinds on the principle of gradual reduction rather than attempting the complete operation at one "crack," the process is repeated usually five times on different machines. The last operation of this stage is where the bran is taken out.

Nothing is wasted in any of the operations. The elevators which Hydro News visited, made dog and cat food, chicken mash, and all types of special "trade name" feed for livestock of every description. On the other hand, the best grade flour obtainable is prepared from Canadian wheat. The western variety is used exclusively for bread and the eastern wheat is used for pastry flour. In Europe, where they have been at the blending game for many years, they produce different pastry flour to that with which we are familiar, but it is said that none can surpass the nutritional values of our domestic supply.

Electrical Bagger

Of all the machines in the elevator, the one which fascinated Hydro News the most was an electrical bagger that filled a sack with the required poundage, and in a continuous operation, stitched up the

J. M. BLUE DIES



JOHN M. BLUE, formerly secretary-treasurer of Dutton Hydro-Electric System, died recently at his home after a two months' illness.

Mr. Blue, until his retirement last summer, had been with Hydro since its inception in 1915, having been asked by Sir Adam Beck, over thirty years ago, to take over the job. During his tenure of office he gave unstintingly of his time and ability and turned in a fine record of service. Upon his retirement a banquet was given in his honour and many of his Hydro friends from Toronto and the municipalities attended.

Taking a keen interest at all times in the civic affairs of the village, he has been actively associated with the welfare and progress of Dutton, and was secretary-treasurer of the High School for seventeen years. He was also an elder in Knox Presbyterian Church.

He is survived by his widow, the former Margaret McColl.

open end. By steady bagging, two men can fill seven bags a minute. Compare this with a hand job!

From here, the grain, feed, flour, chops and other foods are taken to the storage and warehouse section which is served by both railway and road transports.

After having had the opportunity of seeing at first hand the job which is done inside these towering elevators and the part which electricity is playing, the visitor forms a new and broader appreciation of grain, as it passes through the various stages from field to food.



Hydro HOME FORUM by Edithemma Muir HOME ECONOMIST

From the Atlantic coast to your house may be a good many hundreds of miles, but that does not mean you cannot have fresh-flavoured fish for Lenten dinners. Fishing industries now have modern quick-freezing processing methods. Fresh-from-the-sea fish are cleaned and filleted as soon as they arrive at the docks. The fillets are then quick-frozen to seal in the flavour and sent by refrigerator car to all parts of Canada. When buying frozen fillets it is a good idea to remember that one pound will serve three.

* * *

We would rather cut old cheese with a piece of linen thread than use a knife, anytime. Hold each end tightly and press down to cut without crumbling the cheese.

* * *

Guaranteed to please men who like something different in food are Caraway Seed-Potatoes. Boil sweet potatoes, mash with milk and add about a dozen caraway seeds. Perfect with minute steaks!

* * *

Cold fish to use up? Flake fish, add to cream sauce with canned mushrooms and peas. Heat in moderate oven for about 40 minutes. Serve on split tea biscuits.

* * *

One cup of leftover porridge can make a fine dessert. Combine $\frac{1}{3}$ cup sugar, 3 tbsps. cocoa and $\frac{1}{8}$ tsp. salt. Gradually stir in 1 cup milk, a beaten egg, 1 cup cooked farina and $\frac{1}{2}$ tsp. vanilla. Fold in $1\frac{1}{4}$ cups cake crumbs or graham cracker crumbs. Pour into a greased casserole and bake in electric oven at 325 degrees for 45 minutes. Six servings.

* * *

Yes, you can bake an omelet. Beat whites of six eggs to which you've added $\frac{1}{2}$ tsp. salt. Beat yolks with 6 tbsps. water. Fold yolks into whites. Turn into greased casserole. Set in a pan of hot water and oven-poach in electric oven at 325 degrees until well-puffed and brown

BREAD AND CHEESE CUSTARD

6 slices dry bread
 $\frac{1}{2}$ pound old cheese, sliced
 $1\frac{3}{4}$ cups hot milk
1 onion, grated
2 eggs, beaten
1 tsp. salt
Dash of cayenne
Dash of paprika
 $\frac{1}{2}$ tsp. Worcestershire

Arrange alternate layers of bread and cheese in $1\frac{1}{2}$ quart casserole, having cheese on top. Heat milk with onion; pour slowly over eggs combined with seasonings, stirring constantly. Pour milk mixture over bread and cheese; let stand about five minutes or longer. Bake in moderate oven about 35 minutes until custard is set and bread and cheese puffy (350 degrees). For a variation of this simple dish, add a little finely diced celery, minced green pepper and a few cooked green peas to the hot milk seasoned with onion.

(about 15 to 20 minutes). Serve from casserole. Six servings.

* * *

An electric table fountain is something new which was displayed in Buffalo last week. Just plug in the chromium, 3-decker, circular plate and the mechanism agitates a pint of water up and through continuously in a four inch spray. We suggest a few tiny wax flowers for the lower basin.

* * *

Gazing at an aluminum rack that holds six moulds in an upright position, one on top of another, we read the sign that "this takes up little room in your refrigerator." Wonder why they do not make one to carry six cups of coffee which would assist service in a crowded dining room.

* * *

At this season I always remember the St. Patrick's Day when the Murphy boys chased Stinky Porter through a coal pile because he accidentally wore an orange tie to school . . . Or was it accidental?

To me the thought of perky watercress about this time of year is a reminder that spring is just around the corner.

* * *

Dyed green foods should be few and small in portion. And we agree with a Hydro engineer that raw pineapple does not take to green colouring—the pineapple acid is too strong for vegetable colouring.

* * *

Request from Mrs. R. T. for the amount of spices to add to tongue recalls spicy slices bubbling in sour-sweet tomato sauce: Wash tongue thoroughly; cover with hot water; add 3 bay leaves (the leaves in whole mixed spices), 6 whole peppercorns (the tiny black balls without blossom ends) and 3 tiny red peppers (from the dried spices), 1 onion sliced, 1 carrot, 1 stalk celery, 2 tps. salt and $\frac{1}{2}$ tsp. pepper. Cover. Simmer about 3 hours. Drain; skin and slice. Put in pan and cover with Savoury Sauce. Combine 1 can of tomatoes, $\frac{1}{3}$ cup vinegar and $\frac{1}{3}$ cup brown sugar. Simmer 30 minutes.

* * *

Escalloped potatoes, smooth, creamy and crispy on top is a dish to please any man, but not when it is curdled and unattractive. This happens when the oven is too hot. Milk dishes should not boil, and that means milk puddings, too.

* * *

Granny! When you are threading a needle with yarn moisten the end of the yarn and draw it over a cake of soap. It will not fray and the threading is much easier.

* * *

A little time-saver like this one is worth knowing. Instead of going through the long process of basting the hems of curtains use small hairpins. You will find they will not fall through coarse net as common pins do, and they are easily and quickly removed from material.



NAPANEE'S ATTRACTIVE town hall. In 1852 this community became a police village; three years later it was made an incorporated village, and in 1865 it was proclaimed a county town.

**By Grace J. Carter,
Hydro News**

A pleasant, friendly town with a population of some 3,500, Napanee in the united counties of Lennox and Addington, is located on the Napanee river midway between Kingston and Belleville. Essentially a retail centre for the sur-

rounding rich agricultural area there are, however, several small industries which have been served by Hydro since 1916, when the system was purchased by the Province of Ontario and operated by The Hydro-Electric Power Commission. Later, in 1930 to be exact, the municipality purchased the Hydro system and has been operating it ever since.

Prior to Hydro, in fact before the turn of the century, this town was served by two electric plants which obtained their power from the Napanee river. It was a night service only and consumers were charged a flat rate. These plants, however, were unable to give satisfactory service and the municipality constructed a steam plant in 1905. This steam plant continued in operation until 1912, when it was purchased by the Seymour Power Company, who in turn operated it until 1916 when the H.E.P.C. took over.

Supervised By C. A. Walters

Back in 1905 the building of the steam plant was supervised by Charles A. Walters, who has continued to act as manager through the various ownerships right up until the present time. Others on the present Napanee Utilities Commission are: William A. MacKenzie, chairman; James H. Moffat and George S. Chalk, commissioners.

Statistics show that the load in this municipality has doubled in the past fifteen years and it is now approximately 2,000 horsepower, and serves 940 domestic, 220 commercial and 30 industrial consumers. The average monthly consumption of domestic consumers is 208 kilowatt-hours, and the average net cost per kilowatt-hour is 1.23 cents.

The first Hydro commission in this municipality comprised J. E. Robinson, E. J. Roy and M. P. Graham. Evidently a sound financial programme has been followed throughout the years for the final debenture payment was paid off in February, 1939.

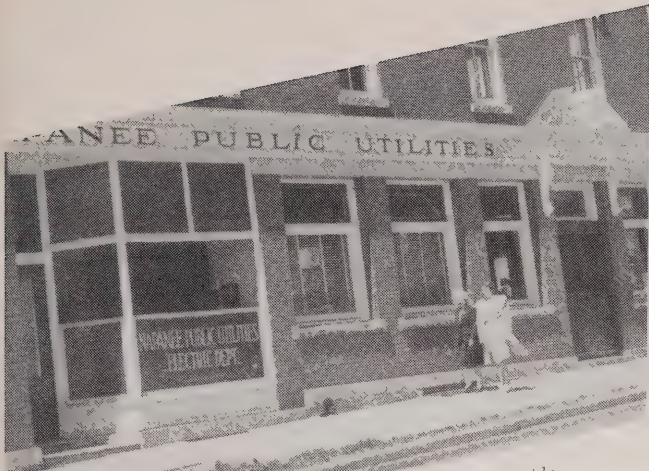
Like so many other towns in Ontario, Napanee traces its origin to a clearing in the forest and the erection of saw and grist mills, which in this particular instance took place about the year 1786. These mills obtained their water power from the fall in the river, which was about thirty feet. It is said that the Mississauga Indians were living in the locality at that time, and originally the settlement was known as Apanee, the Indian name for flour. And from this the present name was derived.

Large Grain Market

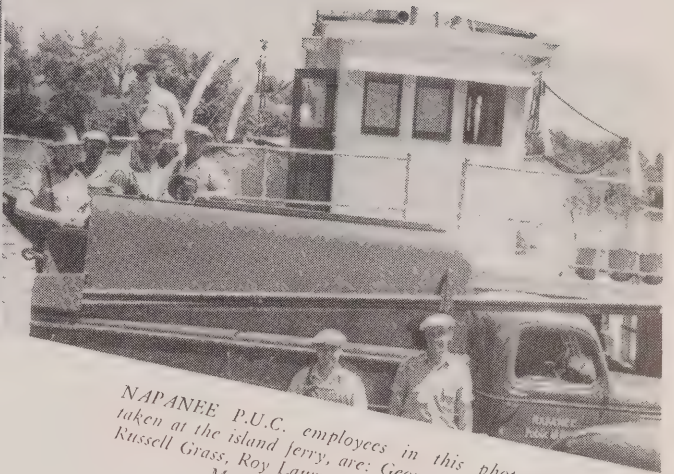
At one time, early in its history, Napanee became a large grain market which was reported to be unrivalled by any other mart between Toronto and Montreal.

In 1852 this community became a police village and three trustees were elected to look after the local affairs. Three years later Napanee was made an incorporated village and elected five councillors, one of whom was chosen

(Continued on page 24)



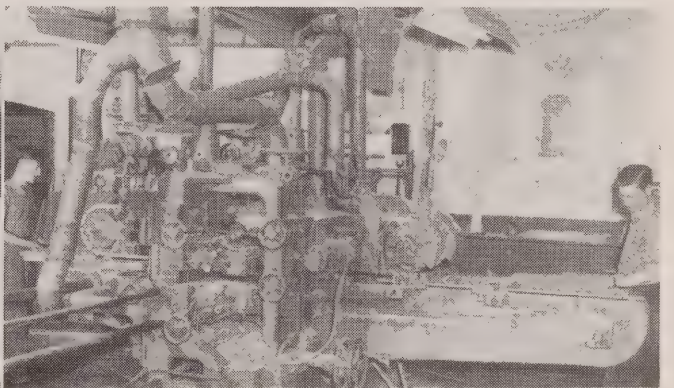
LEAH VAN ALSTYNE, walking on the inside, and Ruth Graham, return to their respective office duties at the Napanee Public Utilities Commission after the lunch hour.



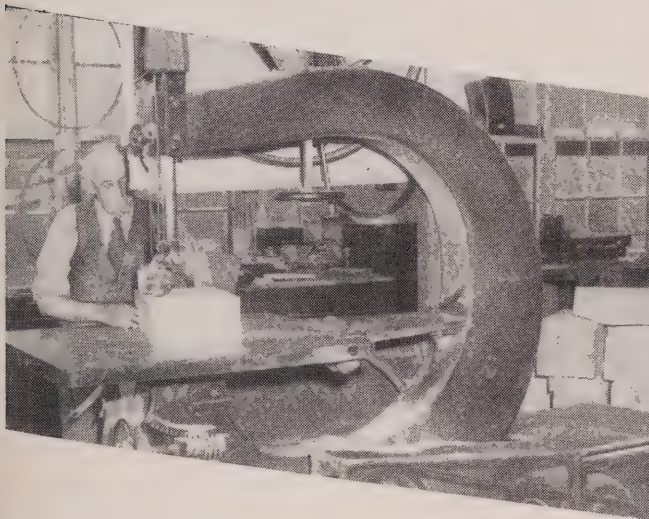
NAPANEE P.U.C. employees in this photograph, taken at the island ferry, are: George Reid, foreman; Russell Grass, Roy Laurence, Harold Barrett, Elwood Manton and Norman Frizzel.



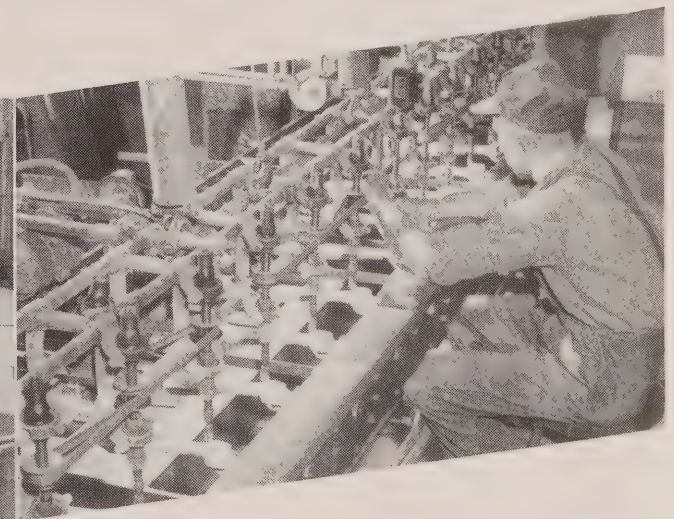
EDWARD LOUCKS, meter repairman, explaining a few of the intricacies of meter repairing to Roy King and Harold Fish in the local utilities' meter room.



USED IN Gibbard Furniture factory, this electrically-driven machine is moulding a vanity table end. The machine has 14 motors ranging from 3/4 to 5 h.p.



WORKING FOR over fifty years in this factory is the record of the man shown above. He is operating a 22-foot electric saw which is cutting door fronts for cabinets.



CAPABLE OF carving twelve Chippendale legs at once, the operator of this electric multiple carver guides a dummy and the twelve legs are carved simultaneously.

FEEDING A MULTITUDE

**By W. E. LeClaire,
Construction Department**

Down through the years, the feeding of thousands of members of the Hydro family engaged in construction work has provided food for thought on the part of those responsible for the preparation and serving of some 10,000 pounds of victuals consumed daily in Hydro construction camps where 12,000 pieces of dishes and cutlery, in addition to pots, pans and other serving utensils are in use three times every day.

On A Scientific Basis

Careful planning, on a scientific basis, enables the Commission to obtain the finest foods which are made into well-balanced, satisfying meals and to rotate menus which provide a pleasing variety. At the same time, wastage in all catering operations has been reduced to a point where it is negligible.

The quality of food bought is the same for all camps big and small, but due to the necessity of portability, our smaller temporary kitchens are the more simply equipped. However, in our larger semi-permanent camps no effort has been spared to obtain and install the latest labour saving hotel and restaurant equipment and machinery to assist our cooks

in serving better meals. Our cafeterias at Stewartville, DeCew and Aguasabon are models of their kind.

The advantages of serving food cafeteria style—the more sanitary method of handling food, the pleasure of getting hot dishes hot and cold dishes cold, the control of food with less staff, and the elimination of waste caused by overpreparation with its resultant loss in leftovers—have amply repaid us for the expense and the many headaches and wild goose chases we had in obtaining the equipment.

Takes Guesswork Out Of Baking

Taking the guesswork out of baking are motor-driven dough-mixers that prepare two bags of flour and bread formula at a time, steam proofing cabinets, and electric or coal-heated ovens with capacities to permit baking two hundred loaves of bread at a time under controlled temperatures, or the hundred pies that are consumed in each place every day. A recent analysis of bread baked in our Stewartville cafeteria bakeshop showed 95% perfection. The 5% short of perfection was mostly due to a shortage of sugar.

Appetizingly crisp toast is turned out electrically at the rate of 12 slices a

minute and served piping hot for breakfast.

Potatoes are peeled at the rate of a bag every two minutes, cooked in large steam-heated aluminum kettles in twenty minutes, and whipped just before serving to light fluffiness in another type of motor-driven mixer that will handle up to 150 pounds of potatoes at a time.

Salads and cold plate dishes are freshly prepared and served from refrigerated counters, while hot foods are maintained at a temperature of about 140 degrees, and served from steam tables on pre-heated dishes, especially during cold weather.

Wash And Sterilize Tableware

Refrigeration is essential in keeping waste to a minimum and, therefore, all meat and other perishable foods are stored at controlled temperatures.

Even dishwashing is done in mass production by mechanically-operated washers that wash and sterilize 4,000 pieces of tableware an hour.

As of writing there are about 1,500 men of many nationalities living in our camps throughout the province, varying in numbers from 15 men at Moor Lake to 350 in our camp at Stewartville.

In planning the menus for these men, consideration is given to the various nationalities represented, the character of



CHEF RONALD A. Wallace has built up a reputation at Stewartville for serving "darn good chow." Here is Mr. Wallace (5th from left) and his crew standing behind their cafeteria counter.

their work and their food preferences. This planning assures the provision of sufficient quantities of all the elements necessary for well-balanced meals at all times, while specific food preferences are featured on the menus on the basis of systematic rotation.

"Out of This World"

The Italians are traditionally fond of macaroni dishes and oil dressings. The Finns like sugar and sweet pastries and coffee. The Russians and Poles are heavy meat eaters, and our French Canadian workers really "go to town" on such items as pea soup, pancakes and syrup, baked pork and beans, and any kind of pie. The office worker and the tunnel driller working in dynamite fumes and fine rock dust may not have the appetites of their fellow workmen who are out in the open air, but all must be provided with ample quantities of hot tasty food in great variety including plenty of fresh fruit and salads. Each man must be fed and each must be satisfied. To do this the food should be "Out of this world" to quote a recent issue of the Ottawa Journal in writing

about the food served in our Stewartville cafeteria, a comment which we think is true of all Commission camps, large and small.

Chosen at random, menus served on Thursday, October 3rd, in one of our camps, are typical:

Breakfast consisted of tomato juice, stewed prunes, assorted dry cereals, all bran porridge, bacon and eggs, sautéed potatoes, toast with butter, jam, coffee with cream, tea and milk.

The dinner menu consisted of cream of potato soup, celery hearts, pot roast of beef with vegetable gravy, individual pork pies, cold roast pork, lettuce, mashed potatoes, lima beans, scalloped tomatoes, apple pie, butterscotch pie, strawberry blanc mange, bread, soda biscuits, assorted cakes, tea and milk.

Supper consisted of vegetable soup, baked ham with raisin sauce, grilled sirloin steaks, assorted cold cuts, oven-browned potatoes, sweet corn, fried onions, sliced tomatoes, apple pie, butterscotch pie, canned peaches, cottage pudding with chocolate sauce, raisin cake, drop cakes, bread, cheese and crackers, tea and milk.

Furthermore, the notices posted in our dining halls "IF YOU WANT MORE OF ANYTHING, IT'S YOURS FOR THE ASKING" are taken literally. All this and lodging too for \$1.00 per man per day! Where else would you find anything like it?

10,000 Pounds Of Food

This board rate of \$1.00 per man per day has been maintained throughout the war years and we have continued to serve the best food obtainable in spite of rising prices of food and labour. At our peak period of 1947 we expect to house and feed about 4,000 men and any further increase in prices of food and labour that might affect our cost even to the extent of one cent per man per day, would mean an amount of \$14,600.00 to be absorbed during the year. Therefore, every effort is made to eliminate wastage of food and unnecessary labour costs from our catering operation while continuing to serve the best of wholesome food in adequate amounts.

To feed the average construction worker normally requires the purchase and preparation of 6.63 pounds of food



"EAT ALL you want but don't waste food" is the slogan for the mess halls in Hydro Construction camps. Here at DeCew, the men pick up their soup and main course at a cafeteria counter and the other viands, such as bread, cake, dessert, tea or coffee, are on the table.

CHEF ED. L. DONAHUE gives the triangle a bang—the signal that "soup's on." The metal triangle is a time-honoured method of making a clear chime-like tone and has been used in Canadian camps from the earliest days. The other gentlemen in the group assist Mr. Donahue in the catering at DeCew.



THERE IS a feminine touch to the meals at Aguasabon as you can see. These charming girls serve the food and help keep things spick and span around the dining room. The scene on the right shows George Murley's camp on the Cameron Falls-to-Aguasabon-line that is now under construction. George is foreman on the job.



per day. Multiply by the 1,500 we are presently feeding and we arrive at a figure of almost 10,000 pounds of food purchased, processed and consumed in our camps every day, in addition to the hundreds of gallons of soup, milk, tea and coffee.

Of this amount, meat and fish requirements alone amount to almost 1,900 pounds per day.

Each day one hundred and eighty-five pounds of shortening go into baking and cooking, in addition to salvaged fats and drippings, and in this day of short supply we occasionally find it necessary to supplement our quota of this item by purchasing butchered fat hogs from which we render the lard and, at the same time, have more fresh pork for our tables.

While our boarders have learned to accept rationing with good grace, normal requirements of butter for 1,500 men would amount to almost 300 pounds per day, and sugar to about 700 pounds per day.

We also use about 120 dozen of eggs daily.

Imagine having to peel and cook thirty bags of potatoes every day in addition to preparing about 1,200 pounds of other vegetables, dry, green and canned!

Over thirteen hundred pounds of flour are processed and eaten daily in bread and pastry.

In one month recently, consumption of fresh milk in our two largest camps was 638 gallons and 896 gallons respectively, an average of over $4\frac{1}{2}$ gallons per

man per month, in addition to a quantity of canned and some powdered milk. On that basis it would take a dairy herd of 60 better-than-average Holstein cows to produce the 300 gallons required every day to supply all our camps. The recent cancellation of the milk subsidy automatically increased our cost of this item \$36 per day.

Coffee has become a very important item on our menus, so important that to ensure uniform quality and freshness, all coffee for our camps is freshly roasted, blended and ground especially for us by one of our foremost coffee dealers and is packed and shipped by express the day on which orders are received.

Only the better brands of tea are used and we do serve a good cup of tea.

Although raisins and other dried fruits are in very short supply, supplementing what we have of these with available canned fruits, we continue to use a thousand pounds of fruits a day in pastry and desserts.

Yes, it is a lot of food, but Hydro employees like to eat.

While we appear to emphasize the large camps and cafeteria service due to the novelty of this type of catering in our organization and the equipment involved, nevertheless we remain conscious of, and do not overlook, the fact that the bulk of our men are housed and fed in smaller units of tent and sectional building camps. On line jobs, particularly where camps are set up only for a short time, and moved frequently, tents were recognized as standard equipment for many years, but during the past two

or three years we have found a more satisfactory method of housing men in sectional buildings which, though light in construction, are much more comfortable and more easily transported than tents. Here too, we maintain the same high standard of quality of food served in ample quantities in the traditional home-style of camp service—everything on the table and lots of it.

C. C. COLE DIES

Cyril Richard Cole, formerly superintendent of the Listowel rural operating area, died recently in the Listowel Hospital following a stroke.

He was born on May 6, 1889, and attended the public school and collegiate institute at Woodstock, and later attended the University of Toronto, graduating in electrical engineering at S.P.S. in 1910, and obtained his Bachelor of Science degree in 1912.

During 1912 and 1913 he was employed by the British Columbia Railway Company on substation construction, and later by the Water Rights Department of the British Columbia Government for surveying power sites and checking water flow in the East Kootenay district. From 1914 to 1920 he was assistant engineer for the Woodstock Public Utilities Commission, and then went to St. Marys Public Utilities Commission as manager until 1930, when he became superintendent at Listowel for The Hydro-Electric Power Commission of Ontario, which post he held until his death.

Mr. Cole is survived by his widow and two daughters, Elizabeth and Catherine.

OVER 200 HYDRO MEN REGISTER FOR ADEQUATE WIRING SCHOOLS

Sponsored By Electric Service League Of Ontario In Co-Operation With Hydro Municipalities And The Commission March 18 to May 1

To date over 200 municipal Hydro men have registered for the adequate wiring training schools sponsored by the Electric Service League of Ontario in co-operation with Hydro municipalities and The Hydro-Electric Power Commission of Ontario between March 18 and May 1.

Schools, it is announced, will be conducted at Windsor, Chatham, London, Stratford, Toronto, St. Catharines, Hamilton, Brantford, Guelph, Owen Sound, Barrie, Smiths Falls and Belleville. In most cases, sessions will occupy one full day.

While these schools are primarily for the purpose of training Hydro men to be local Red Seal inspectors, cordial invitations are extended to contractors whose co-operation is vital to the success of the adequate wiring educational programme launched by the League.

Based on the principle that a stitch in time saves nine, this programme emphasizes the importance of planning now for adequate wiring in homes, factories, offices and on farms in order that Hydro consumers may enjoy, in the fullest possible measure, the increasing benefits of electricity in the years ahead.

Important Public Service

In its announcement, the Electric Service League of Ontario states that in the tremendously big home-building programme now proceeding throughout the province, it is the duty of the electrical industry to see that these homes are adequately wired in accordance with the Red Seal Standard. This, it points out, is not only an important public service, but an essential undertaking to ensure the future prosperity of the industry and of thousands of workers engaged in that industry. The schools, it is emphasized, are important in order that Hydro personnel, who will act as the local Red Seal inspectors, may more fully appreciate the significance of the Red Seal Standard in relation to adequate wiring requirements.

Province-Wide Basis

The Electric Service League of Ontario is supported cooperatively by the electrical industry, contractors, dealers, the Association of Municipal Electrical Utilities, the Ontario Municipal Electric

Association, and The Hydro-Electric Power Commission of Ontario. In addition, the League's board of directors includes a representative of the Ontario Association of Radio and Electrical Dealers and five contractor-dealers, representing different sections of the province.

The newly-organized Electric Service League of Ontario stems from the Electric Service League of Toronto whose twenty-year record of achievement in the field of public service has been acclaimed as pre-eminent and unique. Through the activities of that League 34,000 homes in Toronto were wired in accordance with the Red Seal Standard with 20,000 more homes having been brought virtually up to that standard. Other statistics show that the League was responsible, directly and indirectly, for the installation of 20,000 heavy wire services and 20,000 range wiring circuits and the addition of 700,000 outlets to assure the more convenient and most efficient use of electrical appliances. In addition to

rendering this service to the people of Toronto, the old League was also instrumental in creating some \$15 million more business for the electrical industry at a cost of about 3½ per cent.

The Red Seal Standard, initiated by the Electric Service League of Toronto, it is stated, will be propagated on a province-wide basis by the Electric Service League of Ontario. Through practical application, it has been found to be the most effective system of assuring adequate wiring. The Red Seal Standard, it is explained, is a symbol which indicates that a home has the type of wiring and the number of outlets which will permit the efficient use of all the electrical appliances and equipment which are to be found in the modern home and which are likely to be augmented in the years ahead as materials become more readily available and when still greater use can be made of electricity.

In embarking upon its expanded programme, the Electric Service League of Ontario stresses the fact that it is planning today so that, tomorrow, people throughout Ontario may derive still greater benefit and pleasure from the use of electrical appliances and equipment which are now being blueprinted.

HYDRO ASSISTS UNIVERSITY IN PRESENTING NEW COURSE

Instruction In Electric Power Systems Designed To Bridge Gap Between Theory And Practice

Members of the staff of the Commission, and of the Toronto Hydro-Electric System, are assisting the staff of the Graduate School of the Faculty of Applied Science and Engineering at the University of Toronto in the training of young electrical engineers interested in entering the field of power utility engineering. As one of the required courses leading to graduate degrees in Applied Science, a course has been arranged under the general title of "Electric Power Systems" for which the Commission and the Toronto Hydro are supplying qualified engineers as lecturers.

In planning this course, the University enlisted the cooperation of the Commission's Electrical Engineering Department, who, together with the other Departments of the Commission, had already planned certain courses of training for the junior graduate engineers entering the Commission's employ (see Hydro News September, 1946). These courses had for their objective the correlation of the essentially theoretical undergraduate training with the practical

application of engineering methods in the work of the Commission.

Even though the time available to meet the needs of the University were short, the ground work established was sufficiently broad to permit these lectures to be arranged for the Spring term. Consequently, a series of 23 lectures has been arranged, to be given in the Electrical Building on Monday and on Thursday afternoons between January 13th and March 31st.

A. H. Frampton, Assistant Electrical Engineer, The Hydro-Electric Power Commission of Ontario, who has been actively identified with the planning of the Electrical Engineering Department's course of work, delivered the first two lectures. In them he covered, in a general way, the various phases of the whole course. He presented an overall picture of the origin, development and present status of the modern electric power system. He discussed the component parts and their relationship to the integrated whole, and pointed out

(Continued on page 24)



THIS PICTURESQUE retreat shows the Napanee river falls in Springside Park. It was along this river that the first grist mill was built around the year 1786, and from this beginning a settlement was started which later became the town of Napanee.

NAPANEE

(Continued from page 18)

reeve who acted as police magistrate for the village. Ten years later, on January 1, 1865, Napanee was proclaimed a county town, and B. C. Davy was elected mayor.

Throughout its history Napanee has steadily progressed, and today it is an enterprising community of fine homes, schools, a collegiate institute, public library, churches, armouries, a park with athletic grounds and a golf course.

In addition to looking after its municipal affairs, the Napanee Public Utilities Commission operates for The Hydro-Electric Power Commission of Ontario the Napanee rural operating area, which has approximately 2,000 customers and 350 miles of line, as well as 150 consumers in the village of Newburgh. Practically all the rural construction in this section has been developed and supervised by Manager Charles Walters, who also acts as superintendent for the rural area.

HYDRO ASSISTS

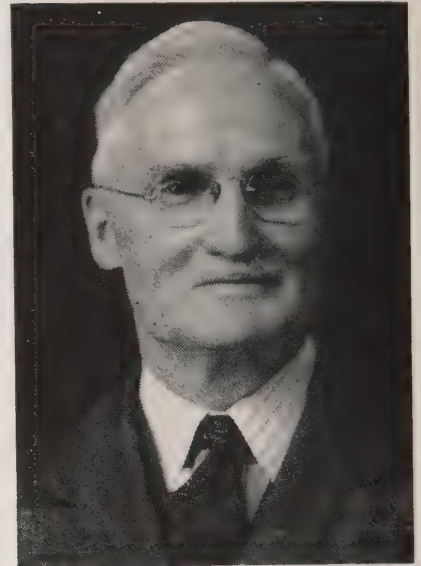
(Continued from previous page)

that the electrical utility business has developed over the short span of 65 years from a dominantly technical venture to a vital position in the industrial economy and the domestic life of current civilization. Mr. Frampton also stated that the utility business had not approached its optimum development and that there would be a continuing urge for more power at lower costs and with higher standards of service security.

"If these conflicting requirements are met," he said, "it will be because of the ability, resourcefulness and technical training of the engineering personnel; the utility which fails to attract its quota of talented young engineers will ultimately fall short of its obligations to the society it serves."

Succeeding lectures have been, or will be given by Messrs. G. F. Simson, G. D. Floyd, H. A. Smith, C. F. Publow, M.

COMMISSIONER MOFFAT



Commissioner JAMES HEARD MOFFAT has been a member of the Napanee Public Utilities Commission since 1930, and acted as chairman from 1933 to 1937. Born in Stratford, Ontario, on March 9, 1876, he attended high school there and later went to Napanee where he is now vice-president of the Gibbard Furniture Shops Limited.

During the warmer months, when not engaged in furniture designing, Mr. Moffat takes time off to play golf.

Ward, M. P. Osburn, C. W. Boadway and A. M. Cutt of the Electrical Engineering Department, J. J. Traill of the Hydraulic Department and C. K. Duff and R. M. Laurie of the Operating Department of the Commission and by Messrs. C. E. Schwenger, G. L. Lillie and H. Hyde of the staff of the Toronto Hydro-Electric System. The lectures cover all the various phases of planning and design in the generation, transmission, transformation and distribution of electric power service. The University has extended to the Commission the courtesy of permitting its engineers to attend these lectures gratis. The average attendance to date has approximated 100, a large number of whom have been junior engineers who have accepted this invitation.

This new enterprise on the part of the University and of the Commission, is further evidence of the progressive ideas in engineering training with which the Commission is pleased to identify itself.

#his and #hat

By The Editor

IT SEEMS as if the lamb had the edge over the lion this year. However, it would be just as well if we don't let the Weatherman pull the wool over our eyes just in case we take action which may be premature in tossing away the woolies. With the coming of March, however, it is inevitable that we should be thinking of spring time and the early crocus. Any time now we may expect the usual annual influx of spring poetry and the appearance in our office of sensitive souls with far-away looks in their eyes.

March not only reminds us that we are about to cross the threshold of spring but that there are now only about 245 shopping days until Christmas. As a matter of fact, this year's Christmas cards are now ready and the card manufacturers are working on the 1948 Yuletide models. And speaking about Christmas, we have a friend who has started his Christmas shopping in line with a New Year resolution. He has adopted the practice of making a few purchases at different sales. By doing this until October, he says he will have done all his Christmas shopping and have his parcels wrapped by the end of November. He then plans to spend his spare time between December 1 and December 24 chuckling at exhausted Christmas shoppers. Nice sort of chap! Just the same, we think he's got something.

* * *

DURING THE past ten days we have wondered how many Canadians realize that paradise is not some place that is very remote and in the future but that it is **RIGHT HERE IN CANADA, TODAY?** This is not our own thought. It came from Stuart Richardson, former President of the Quebec Chapter of the Canadian Industrial Editors Association, when addressing the recent national convention of this organization with which we are privileged to be associated. Mr. Richardson, who was born in England

and who has been in Canada for nearly twenty years returned to his native land recently to see his mother and sisters. His graphic, first-hand account of the privation and hardships which the British people are experiencing after six harrowing years of war, left no doubt in our mind that Canada is truly a paradise even allowing for the fact that we are plagued by shortages of materials. Every box of food sent to Britain these days means far more than can ever be expressed in words.

* * *

GIVE CLIFF BELL, night guard at the London Public Utilities Commission, enough rope and he'll—lasso a young doe. Here's the story. The animal, which had apparently developed a desire to experience city life, and possibly look over some of London's historic spots, including the residence of the late Sir Adam Beck, made good its escape from the Springbank Park deer-pen. For 24 hours she cavorted through the streets. Then Cliff Bell eventually spotted the doe outside the sub-station at Horton and Ridout Streets and, in true wild west style, he roped the animal which is now safely back in the deer-pen.

* * *

AN ORGANIZATION which, through contributions of its members and through dances, bridges and similar events, raised \$60,000 for war activities has good reason to be proud of its achievement. That is the record of the Ontario Hydro-Electric Club—a fact which was revealed at the annual meeting. Recognized war charities which benefited through disbursements from this money during the war years included the Red Cross, the Salvation Army, the I.O.D.E., the K. of C., the Navy League, the Canadian National Institute for the Blind, the Canadian Legion War Services and the Telegram British War Victims Fund. In addition, Gordon Norris, the president, reports, the club sent comfort boxes to Commission employees in the armed

services, while 1,500 Christmas boxes were mailed every year during the war years. At the same time, 26,000 cigarettes a month were sent not only to Commission employees but to hospitals and many active service units.

Members of the Ladies Auxiliary are deserving of the highest tribute for their fine work. During the war they sent 8,035 sewn and knitted garments and 25 quilts to the Red Cross and to the National Children's Home and Orphanage in England. In addition, these ladies also collected two truck loads of used clothing for the Aid-to-Russia Fund.

Then there were the active members of the Hydro Girls Club, which was organized in 1944 as a subsidiary to the parent club. These girls provided cigarettes, candies, sandwiches, coffee and entertainment for the wounded soldiers at Christie Street Hospital and at Lyndhurst Lodge during 1944, 1945 and 1946, visiting these institutions on an average of two nights a week.

Since the cessation of hostilities, the Ontario Hydro-Electric Club has carried on its programme of charitable activities by contributing \$4,000 to the Hospital for Sick Children Fund, by endowing a room at the new Sunnybrook Hospital and by contributing to the Amputation Memorial Project. Truly, a very fine record.

* * *

IN THE ROLE of "The man with the story behind the electric switch," James A. Blay, the Commission's assistant director of promotion, appeared before the CIBC microphone in Toronto on Saturday, March 1, between 7 and 7.30 p.m. to tell young Canadians how power from falling or running water is turned into electric power and how that electric power is transmitted and distributed to homes, factories and farms where it is available at the flip of a switch. Assisted by a supporting cast of young people, Mr. Blay unfolded his story in the course of the dialogue. The broadcast was one in a series of educational features presented for young people over a Dominion network of 34 stations.

Lighter Lines



"Watch this! I'm going to walk from here to the bar without any of 'em getting my eye!"

"How are my chances, doctor?" asked an anxious patient.

"Oh, pretty good," replied the doctor cheerfully, "but all the same I wouldn't start reading any continued stories."

The man who waits for things to turn up has his eyes fixed on his toes.

—Creswell McLaughlin

Tell me what you are busy about and I will tell you what you are.

—Goethe



"If I had any letters from my former employer, I wouldn't be looking for a job!"

The telephone rang and the dumb cluck answered it. "... couldn't say, why don't you call the weather bureau?"

"Who was that?" asked his wife as he hung up.

"Oh," said her husband, "it was some dope who wanted to know if the coast was clear."

A great part of the happiness of life consists not in fighting battles but in avoiding them. A masterly retreat is in itself a victory.

—Longfellow

"While Deacon Brown passes de plate" announced Parson Black, "de choir will sing 'Salvation am Free.' But please remember dat while salvation am free, we has to pay de choir for singing about it."

Work is the meat of life, pleasure the dessert.

—B. C. Forbes

Half the world is on the wrong scent in the pursuit of happiness. They think it consists in having and getting and in being served by others. It consists in giving and in serving others.

"Officer," said the sweet young thing, "I left my car parked here a few minutes ago and now it is gone."

"It must have been stolen, miss," said the policeman. "Oh no it couldn't be that," she explained earnestly, "it was insured against theft."

A verminous loafer lay dozing in the park. Suddenly a hornet came and stung him. "This is really too much," he cried, "now you've all got to go!"

If evolution works, Nature will produce a pedestrian who can jump three ways at once.

Two small boys were examining some mummies in the Egyptian section of the museum. "What does the card on this mean," said one, "it says B.C. 3,300?" "Don't be so stupid," said the other. "That's the number of the car that hit him."



"What are you two doing in the dark?"

There's no justice. If you make out your income tax correctly you go to the poorhouse. If you don't you go to jail.

An anxious old lady on a river steamer approached the captain. "Would you tell me if this boat is going up or down." "Well, madam," he replied politely, "the boiler is bad so we may go up. On the other hand, she's a leaky old tub so we might easily go down."

Still, if nobody dropped out at the eighth grade, who would be ready to hire the college graduates?



"What's your hurry, wrong number—haven't you any curiosity?"

HYDRO AT WORK

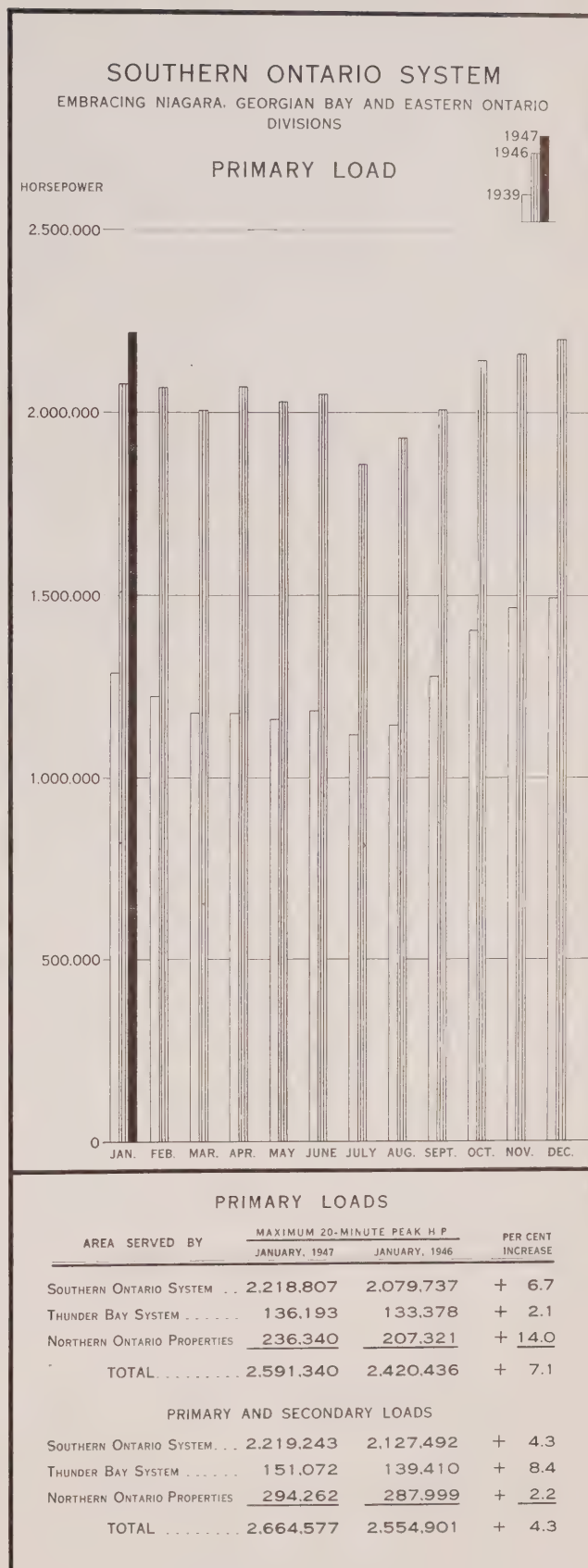
ELECTRIC EYE--The Automatic Assistant



The doors swing in and the doors swing out but the little lady, shown above, carrying the tray in one of Toronto's modern restaurants, does not have to touch them. From the post on the right comes a beam of light which is focussed on a photo-electric cell on the opposite wall. When this ray is broken by someone walking past, the photo-electric cell activates a switch which sets a small electric motor in motion and the doors are opened in less time than it takes to talk about it. The same principle is used to count people, to stop an elevator at the right place and for many other purposes.

Perhaps the most widely used application is that of a silent guardian, to warn police of prowlers. Used in a bank or any other institution, the electric eye, instead of operating a motor sounds an alarm.

This type of alarm, which is electrically-operated, can be installed in such a way that a warning signal will be recorded on a panel several miles away or be sounded outside the building in which the electric eye is on guard.



MUNICIPAL LOADS, DECEMBER, 1946

SOUTHERN ONTARIO SYSTEM

NIAGARA DIVISION (25-Cycle)

	H.P.	Domes- tic Con- sumers
Acton	2,190	544
Agincourt	345	168
Ailsa Craig	178	147
Alvinston	198	205
Amherstburg	1,631	734
Ancaster Twp.	541	394
Arkona	101	117
Aurora	1,867	793
Aylmer	1,389	758
Ayr	373	227
Baden	714	168
Beachville	887	167
Beamsville	740	399
Belle River	336	314
Blenheim	1,139	560
Blyth	184	184
Bolton	362	172
Bothwell	229	185
Brampton	4,107	627
Brantford	26,510	8,337
Brantford Twp.	2,590	1,476
Bridgeport	344	178
Brigden	177	125
Brussels	366	256
Burford	359	235
Burgessville	101	64
Burlington	2,364	1,234
Burlington Beach	759	732
Caledonia	613	452
Campbellville	81	50
Cayuga	283	186
Chatham	10,058	4,575
Chippawa	505	364
Clifford	152	130
Clinton	932	593
Comber	238	120
Cottam	137	131
Courtright	81	91
Dashwood	136	102
Delaware	107	71
Delhi	1,041	609
Dorchester	172	157
Drayton	175	167
Dresden	663	466
Drumbo	143	90
Dublin	72	61
Dundas	3,891	1,458
Dunnville	2,126	1,063
Dutton	367	234
East York Twp.	15,471	11,918
Elmira	1,829	554
Elora	622	355
Embro	212	125

	H.P.	Domes- tic Con- sumers
Erieau	175	197
Erie Beach	16	79
Essex	794	528
Etobicoke	15,860	6,157
Exeter	1,077	544
Fergus	1,842	770
Fonthill	336	300
Forest	772	510
Forest Hill	10,880	3,567
Galt	14,415	4,296
Georgetown	2,796	833
Glencoe	294	230
Goderich	2,075	1,361
Granton	90	85
Grimsby	1,228	655
Guelph	15,542	5,703
Hagersville	976	406
Hamilton	181,227	43,700
Harriston	659	378
Harrow	757	350
Hensall	346	210
Hespeler	3,550	825
Highgate	145	107
Humberstone	891	738
Ingersoll	3,877	1,568
Jarvis	239	163
Kingsville	1,011	641
Kitchener	36,415	8,718
Lambeth	249	140
LaSalle	428	259
Leamington	2,821	1,688
Listowel	1,826	801
London	55,301	19,859
London Twp.	859	494
Long Branch	2,370	1,564
Lucan	327	186
Lynden	145	105
Markham	516	350
Merlin	172	124
Merritton	10,544	962
Milton	1,901	555
Milverton	481	263
Mimico	4,520	2,306
Mitchell	953	521
Moorefield	124	56
Mount Brydges	154	166
Newbury	55	70
New Hamburg	820	384
Newmarket	2,398	1,022
New Toronto	13,189	2,029
Niagara Falls	14,304	4,984
Niagara-on-the-Lake	1,024	623
North York Twp.	17,365	7,019
Norwich	609	391
Oil Springs	244	104
Otterville	164	143

	H.P.	Domes- tic Con- sumers
Palmerston	748	400
Paris	2,658	1,215
Parkhill	348	315
Petrolia	1,268	825
Plattsville	229	118
Point Edward	1,955	349
Port Colborne	2,906	1,655
Port Credit	1,464	649
Port Dalhousie	1,307	691
Port Dover	818	750
Port Rowan	170	171
Port Stanley	646	825
Preston	5,248	1,689
Princeton	202	98
Queenston	176	81
Richmond Hill	899	414
Ridgetown	921	599
Riverside	2,185	1,559
Rockwood	213	174
Rodney	230	239
St. Catharines	32,202	8,742
St. Clair Beach	136	102
St. George	263	154
St. Jacobs	404	141
St. Marys	2,323	1,076
St. Thomas	10,829	4,718
Sarnia	9,519	5,403
Scarborough Twp.	8,345	5,950
Seaforth	1,395	524
Smithville	432	185
Simcoe	3,735	1,678
Springfield	109	133
Stamford Twp.	4,574	2,497
Stoney Creek	483	289
Stouffville	606	408
Stratford	8,942	4,561
Strathroy	1,894	876
Streetsville	282	208
Sutton	369	468
Swansea	4,273	2,096
Tavistock	793	300
Tecumseh	619	711
Thamesford	367	147
Thamesville	359	243
Thedford	178	166
Thorold	129	83
Thorndale	4,086	1,274
Tilbury	1,313	502
Tillsonburg	2,351	1,243
Toronto	465,521	154,302
Toronto Twp.	6,033	3,065
Wallaceburg	6,159	1,387
Wardsville	89	65
Waterdown	419	280
Waterford	663	397
Waterloo	8,364	2,306
Watford	525	312

MUNICIPAL LOADS, DECEMBER, 1946

	H.P.	Domes- tic Con- sumers		H.P.	Domes- tic Con- sumers		H.P.	Domes- tic Con- sumers
Welland	13,445	3,264	Neustadt	47	110	Iroquois	413	279
Wellesley	191	137	Orangeville	1,277	746	Kemptville	588	393
West Lorne	579	227	Owen Sound	8,954	3,663	Kingston	20,486	7,867
Weston	7,062	1,700	Paisley	213	202	Lakefield	635	360
Wheatley	342	237	Penetanguishene	1,396	773	Lanark	158	173
Windsor	61,401	26,609	Port Carling	165	211	Lancaster	87	116
Woodbridge	973	314	Port Elgin	673	509	Lindsay	4,450	2,289
Woodstock	10,153	3,448	Port McNicoll	163	241	Madoc	386	318
Wyoming	181	166	Port Perry	482	381	Marmora	216	249
York Twp.	31,191	21,946	Priceville	18	38	Martintown	83	56
Zurich	184	149	Ripley	228	129	Maxville	168	176
	(66 2/3-Cycle)		Rosseau	44	58	Millbrook	159	182
Bronte	284	244	Shelburne	462	314	Morrisburg	523	444
Oakville	2,316	1,285	Southampton	670	567	Napanee	1,882	897
Trafalgar Twp.	1,024	573	Stayner	370	341	Newcastle	331	230
			Sunderland	146	140	Norwood	306	242
GEORGIAN BAY DIVISION			Tara	195	164	Omeme	337	173
	(60-Cycle)		Teeswater	289	233	Orono	162	183
Alliston	728	447	Thornton	63	67	Oshawa	22,400	6,765
Arthur	267	199	Tottenham	174	161	Ottawa	45,805	15,658
Bala	162	336	Uxbridge	537	423	Perth	2,208	1,110
Barrie	6,050	2,471	Victoria Harbour	85	271	Peterborough	23,821	6,702
Beaverton	354	331	Walkerton	1,386	687	Picton	2,042	1,336
Beeton	165	148	Waubauskene	146	235	Port Hope	3,272	1,455
Bradford	472	291	Warton	602	437	Prescott	1,724	815
Brechin	53	53	Windermere	38	64	Richmond	123	85
Cannington	311	262	Wingham	1,190	560	Russell	141	119
Chatsworth	171	108	Woodville	126	116	Smiths Falls	4,160	2,012
Chesley	823	456				Stirling	511	293
Coldwater	231	159	EASTERN ONTARIO DIVISION			Trenton	6,926	1,833
Collingwood	3,272	1,650		(60-Cycle)		Tweed	455	321
Cookstown	153	119	Alexandria	467	415	Warkworth	118	135
Creemore	216	176	Apple Hill	67	66	Wellington	343	343
Dundalk	326	210	Arnprior	1,867	891	Westport	174	149
Durham	594	464	Athens	196	183	Whitby	2,096	1,054
Elmvale	306	191	Bath	72	64	Williamsburg	140	86
Elmwood	134	72	Belleville	9,671	3,939	Winchester	524	309
Flesherton	206	126	Bloomfield	163	181	THUNDER BAY SYSTEM		
Grand Valley	230	184	Bowmanville	3,900	1,234		(60-Cycle)	
Gravenhurst	1,836	593	Brighton	761	563	Fort William	20,482	7,332
Hanover	1,818	850	Brockville	9,389	3,101	Nipigon Twp.	398	243
Holstein	25	63	Cardinal	445	394	Port Arthur	24,904	6,099
Huntsville	1,715	744	Carleton Place	2,341	1,076	NORTHERN ONTARIO		
Kincardine	1,062	741	Chesterville	463	248	PROPERTIES		
Kirkfield	26	37	Cobden	210	160	Nipissing District		
Lucknow	565	287	Cobourg	2,920	1,443		(60-Cycle)	
MacTier	189	128	Colborne	380	285	North Bay	7,258	3,379
Markdale	292	231	Deseronto	380	395	Patricia District		
Meaford	1,058	757	Finch	142	107		(60-Cycle)	
Midland	4,656	1,625	Frankford	270	262	Sioux Lookout	511	512
Mildmay	241	184	Hastings	244	238	Sudbury District		
Mount Forest	913	502	Havelock	300	295		(60-Cycle)	
						Capreol	629	344
						Sudbury	13,828	8,734



... Right Now, Gentlemen,

We should see about Hydro Power

If you expect to need more Hydro power for a new factory or new additions, you will be wise to discuss your plans with Hydro while they are in the "blueprint" stage. If you neglect this, a costly delay in starting operations may be inevitable.

Even where power lines pass by your site, they may be well loaded already . . . or others may be planning to use more power in the same district. Hydro has to plan, and probably provide additional distribution equipment, in order to supply added blocks of power. This all takes time, especially in these days of uncertain supply conditions.

It is Hydro's genuine desire to co-operate with industry and to serve its power requirements promptly and efficiently. If you will contact your local Hydro well in advance of your anticipated needs, it will be to your advantage and will avoid delay and inconvenience.



THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

HYDRO! News



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THEN AND NOW



Thank you

HYDRO USERS

• The wintertime power shortage in Southern Ontario has been relieved with the coming of spring and the longer hours of daylight. In the winter months the shorter and darker days create a maximum demand on your Hydro system. Conditions in this winter season are such that Hydro plants are loaded to the point where it becomes necessary to ask for the co-operation of all Hydro users in saving electricity by every possible voluntary means. In the spring and summer season the urgency for conservation is not so great as in the fall and winter.

The voluntary saving of electricity in homes, offices, theatres, stores, and in industry, greatly relieves this condition. Your response was very helpful. To those who so willingly co-operated during this emergency period, Hydro says, "Thank You."

In many localities Hydro stations and lines are overloaded because of the delay in obtaining necessary new equipment. Therefore, do not waste electricity—use Hydro wisely at all times.



THE HYDRO - ELECTRIC POWER COMMISSION OF ONTARIO

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THE FRONT COVER



To illustrate that fashions are really getting "down to earth" again, these two charming ladies stepped on to this month's front cover. Folks of the gas-lamp-tenement-horse-and-buggy era would probably have taken a dim view of such daring as shown by the lady on the left—or would they? Current ideas of the moguls of mode are incorporated in the creation provided through the courtesy of the Robert Simpson Company of Toronto (advt.) and displayed on the lady on the right. The distressed artist did his best but his April showers failed to shrink the skirt sufficiently so that it would be in keeping with modern street lighting, buildings and cars.

CONTENTS

	Page
Ontario's Northland - - - - -	2
Page Three - - - - -	3
Today's Milk - - - - -	4
Hydro On Threshold Of New Era (O.M.E.A.- A.M.E.U.) - - - - -	7
More Electricity Needed (O.M.E.A.-A.M.E.U.) -	8
O.M.E.A. Seeks Additional Data - - - - -	10
Convention Pictures - - - - -	11
Democracy Is Subject Of Stirring Address (O.M.E.A.-A.M.E.U.) - - - - -	12
Convention Caricatures - - - - -	13
April Showers - - - - -	14
Present Problems Facing Hydro (O.M.E.A.) -	15
Convention Camera Impressions - - - - -	16
Convention Pictures - - - - -	19
"Pros" And "Cons" Of Changeover (O.M.E.A.- A.M.E.U.) - - - - -	20
Correction Of Blight In Residential Areas (A.M.E.U.) - - - - -	22
Hydro Home Forum - - - - -	23
In Planning System Have Eye To Future (A.M.E.U.)	24
Conference Vox Pop - - - - -	25
This And That - - - - -	26
J. H. Mackay Passes - - - - -	27
Lighter Lines - - - - -	28
Safety Practices In Industry (A.M.E.U.) - -	29
Eternal Vigilance Price Of Good Service (A.M.E.U.)	30
Hydro At Work - - - - -	33
Monthly Load Summary - - - - -	33





Picture of the Month

ONTARIO'S NORTHLAND, in its setting of unspoiled natural beauty, as reproduced above, was always a favorite subject for the camera of Hydro's photographer-artist, the late J. H. Mackay.

* Page Three *

"MAC" PASSES ON

HYDRO has been fortunate in attracting to its service men whose steadfast loyalty and devotion to duty have been illuminated by special talents and abilities. Outstanding in the field of photographic art was the late Joseph Harold Mackay whose recent passing terminated twenty-seven years of continuous service with the Commission.

Although his camera work compared favourably with the world's leading professional art photographers and won recognition in the salons of both Europe and America, Mr. Mackay, known to his many friends as "Mac," always regarded himself as an amateur. Until two years prior to his death he had served as a civil engineer in the Commission's transmission department, but with new emphasis being placed on photography as a means of informing the public of Ontario about the services, programmes and objectives of Hydro, Mr. Mackay was called upon to contribute more and more to this class of work until at last he was exclusively occupied with it. His covers and photographic illustrations for Hydro News, as well as for many booklets and pamphlets, were everywhere acclaimed. He had the faculty of discovering the beautiful and romantic which underlie most of Hydro's physical structure, and he had the rare skill to make his camera tell an attractive and effective story.

Mr. Mackay is survived by a widow and son. But many thousands more will mourn his loss, and these will be by no means confined to the personnel of Hydro.

* * *

AT EASTER

*At Easter let your clothes be new
Or else be sure you will it rue Old English rhyme.*

WHY does the feminine portion of our population feel badly done by if they can't have new Easter bonnets? Why do we exhibit our new clothes in an official promenade on Easter Sunday? Why do our children clutter the house with colouring dyes and transfers and hard boiled eggs at this season? Why are shop windows decorated with lilies and daffodils and pink-eared bunnies? It is for the very good reason that our parents have done these things and their parents and their parents right back into the very dawn of history when our ancestors were probably painting themselves bright blue and building monuments to

the sun. Many customs today connected with Easter originated in various countries as part of the ceremony to celebrate that glorious revival of growth and life that we call spring. Even the word "Easter" is from Oстера or Eostre, the Anglo-Saxon goddess of spring who was associated with the most joyous festival of the whole year.

When primitive people observed the wonderful new world that appeared in spring, they had the natural desire to express this freshness and newness in their own lives. So they threw away their old clothes and started out with a completely new wardrobe. They cleaned and scoured their houses, put out their household fires and lit fresh ones. The ancient Chinese, Japanese and north American Indians, to name only a few, followed this ritual. As far as the Easter bonnet is concerned, for that we must thank a more recent superstition that to wear a new bonnet for the first time on Easter Sunday is to be assured of happiness in love during the whole year. No wonder the hat shops do business at Easter!

The mystery of the egg seemed to contain for many ancient peoples the very secret of life itself and it came to be looked upon as the symbol of the emergence of life from something that appears to be without life. The ancient Persians, among others, presented each other with brightly-coloured eggs at the time of their spring festivals. Christianity borrowed the idea and made the egg a symbol of new life and resurrection. To this day, all over the Christian world, eggs are painted at Easter time and in certain peasant countries the intricate colours and patterns are a jealously-guarded household secret. The part played by the Easter bunny is obscure; it has been a widespread belief that rabbits lay eggs on Easter eve but no one knows where the idea got started.

One of the loveliest of the ancient beliefs concerning Easter was that the sun danced early on Easter morning. It was the common custom to rise at dawn to watch, and in certain parts of the British Isles people helped things along by placing large pans of water outside to catch the first rays. It is said that to this very day there are peasants in lonely parts of Ireland and Scotland who rise at dawn on Easter morning to watch the "dance" of the sun, regarding it as a symbol not only of the new life on earth but of the Christian resurrection.

Today's Milk

By W. Ronald Mathieson,
Hydro News

The year is 1905 and the time is 7.30 in the morning. An open cart, drawn by a patient-looking horse, lumbers round the corner and stops right in front of your place. The milkman is here! This is a signal for folk to reach for the old granite pail behind the stove in the summer kitchen and carry it out to "Charlie" who is standing in the wagon-box amid a score of galvanized milk drums.

Using the end of his whip or an old wrench, whichever is the handier, he loosens the lid of one of the cans and, with a big dipper that has been hanging on a hook on the back of the driver's seat, ladles out what he figures are two quarts of milk and, at the same time, flicks away the flies that have already

started to settle on the rim.

"Where are you getting your milk from now, Charlie, since you got all the extra customers on your route?" "Well" he says, "We aren't watering it to make it go 'round like some of the dairies are doing, in fact, we are buying extra milk from the Phillippes farm . . . all they will sell us . . . good milk too . . . the boss insists that they scald our milk cans before they fill them."

There we have a picture of the milk business as it was operated not so very long ago when only cream or whole milk were sold—and, by the way, if you wanted cream, some junior would turn a separator by hand for a couple of hours—and the skim milk was given to hogs free of charge.

Then came Hydro in Ontario and, at the same time, the significance of pasteurization was being more fully

understood and appreciated, with the result that a transition in methods of operating began to take place in the dairy business. Meanwhile, electrical engineers were working on electric machines which would be clean, fast, efficient.

To form an impression of the changes which have taken place since the open can and ladle method of marketing, let's look at a dairy as it is operated to-day.

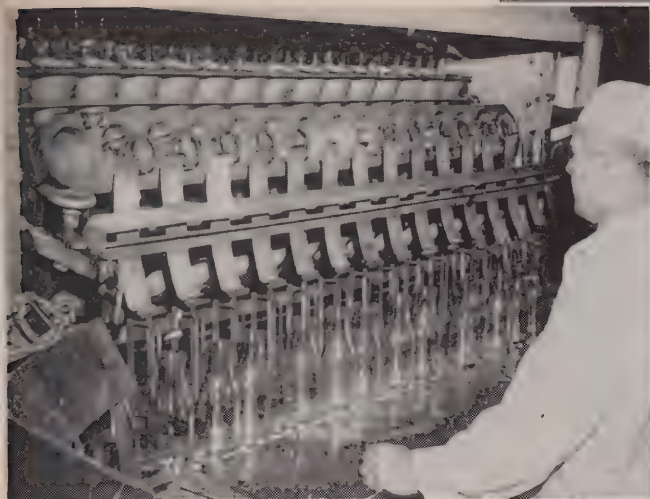
In the first place, most of the bigger organizations have a farm of their own as well as picked suppliers whose herds are tested regularly for T.B. Also, "Bossy" gets a regular check-up to make sure she is both happy and healthy, as these conditions are a prerequisite in the production of good milk.

Right from the drop of the hat, every container in which milk is shipped is sterilized, and each can that comes from



IN THE laboratory, tests are made of samples from each shipment of milk. Here two technicians are working on a shipment that has just been received.

HERE IS the "sniffer" (below) pouring milk into the weighing machine. The man, on the right, keeps track of all the data concerning the shipment.



IN MILITARY fashion, the bottles come out of the washer. Each one is thoroughly sterilized. It is a criminal offence to use a milk bottle for anything but milk, Hydio was told.



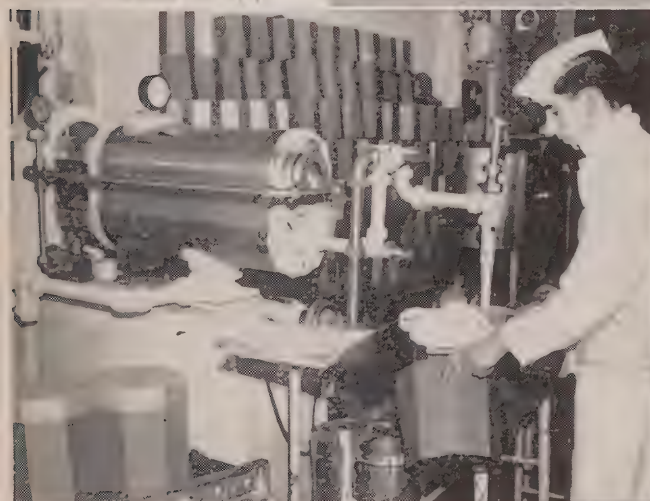
HERE ARE the cans (below) coming in from the room on the rotary conveyor. Notice how the lids are all sealed and tagged.



EILEEN CAMPSALL, home economist for Bordens, points out the quart tube which makes the milk.



THIS IS the dairy room (below), where the pasteurization of milk is controlled. It records temperatures and other data on this process.



THEY DON'T fool when they make ice cream commercially but this picture should be in colour to do the product full justice.





a farm is sealed to prevent the lid from coming off and as an added protection against tampering.

On Arrival At The Dairy

The cans are unloaded onto a ramp and, by means of a gravity conveyor belt, they are moved inside. Here the seal is broken and a professional "sniffer" smells the lid—just in case.

The "sniffer" who subjects the milk to one of the oldest and most reliable tests, has had many years of training and can quickly detect any tainted milk.

Following this, the cans are emptied into a trough which is, in reality, a scale for weighing the milk. A record is maintained of the weight of the milk and the name of the supplier. Next, samples are taken from each shipment and rushed to the control laboratory where skilled analysts prepare individual ratings which act as a guide in quality control.

In the meantime, the milk that has been weighed is stored in a cool temperature in glass-lined vertical tanks until it is time for processing.

"Irradiation" is the name given to the process involved in adding Vitamin D. to milk—informally, Vitamin D is known as the sunshine vitamin. As this machine is totally enclosed, you cannot watch the process, but, in examining the mechanism when it is not in use, the first impression is that the mercury quartz vapor lamp, which imparts the vitamin, looks for all the world like a fluorescent unit. The milk passes down each side of this tube in a filmy curtain, and, Hydro News was informed, approxim-

ABOUT THE only manual operation in the dairy is filling the cases as the bottles come off the assembly line. Bottles are filled and capped at a rate of 120 an hour. Note the fluorescent lighting right over each track.

ately 400 vitamins are added to each quart of milk by this process. This irradiated milk, incidentally, sells at a premium over the regularly processed milk.

Process Of Pasteurization

All milk sold in cities, towns, villages and specifically designated areas of Ontario is required by law to be pasteurized. The process of pasteurization is designed to eliminate the presence of harmful bacteria in the milk. There are two ways in which this is accomplished. The most widely used method is a system by which the temperature of the milk is raised to 143° Fahrenheit and maintained at this level for 30 minutes. The other method, known to the trade as "short time high temperature" (S.T.H.T.), brings the milk up to a temperature of 161° for a period of 17 seconds, after which the milk is cooled to 45 degrees and stored.

Fascinating Machine

There is another fascinating machine that breaks up the particles of butter fat and produces homogenized milk. This is what hydraulic engineers would describe as a sort of hydraulic ram. It forces the milk through minute holes under terrific pressure. While there is

no chemical change to the milk in this operation, the physical difference is that particles of butterfat are now distributed equally throughout the milk and no cream will ever form on the top of a bottle.

Washing And Sterilizing

From the cooling tanks the milk goes through pipes to the bottling machine. In the meantime, the used milk bottles are being scrubbed inside and out in a machine which takes about 22 minutes to sterilize and wash a bottle. This is accomplished by placing the bottles on racks which, as they move along, bring them into contact with revolving brushes. The progress of the racks is synchronized with the up-and-down movement of the brushes, whose quickly revolving bristles do a whole row of bottles, lift up and then come down on another row which has moved into position. The mechanism of this progressive washer is so designed that every bottle passes through a bath of caustic soda of different strengths before going into the rinsing tanks.

When they are perfectly clean, the bottles are carried along a moving track to a filling machine. Here the milk flows out of the pipes and into the bottles, each bottle being filled with the exact quantity of milk. Another electric machine "caps" them at a rate of 120 bottles a minute.

There is a companion machine that fills wax containers which many people buy every day at lunch counters and which are often bought for home use.

Up to this point, electrical machinery

(Continued on page 22)

SEES HYDRO ON THRESHOLD OF NEW ERA OF DEVELOPMENT

**Commissioner W. Ross Strike, K.C., Stresses Need For Faith In Face of Present Temporary Problems—
Addresses Joint O.M.E.A.-A.M.E.U. Gathering At Annual Conference**

Hydro is on the threshold of a new era of development. If present problems are faced in the same spirit of steadfast faith and resolution which has been characteristic of this great cooperative enterprise in the past, then there need be no fear of the future. In spite of temporary checks, the march will go on to ever-broadening horizons of achievement. But there must be faith to combat those feelings of frustration which are prone to arise when well-planned programmes are unexpectedly retarded. And there must be resolution to support that faith and to make it effective and fruitful.

These were the thoughts left with his audience as Commissioner W. Ross Strike, K.C., concluded a frank and illuminating address to a joint meeting of the Ontario Municipal Electric Association and the Association of Municipal Electrical Utilities during their recent convention in Toronto.

The Hydro Commissioner, in his address, briefly reviewed the history of Hydro from its origin, drawing particular attention to the crises that had been met and successfully surmounted, and went on to discuss present problems and future plans.

Early Problems

Initially, Mr. Strike pointed out, the Commission was formed by the Provincial Government to purchase a definite block of power for a defined group of municipalities. Critics of Hydro believed, or pretended to believe, that this undertaking would ruin both the municipalities and the Province. As a matter of fact, the scheme proved so successful that further power had to be purchased and more municipalities insisted on joining the original group. They had discovered that a policy of power at cost was a very sound principle. The project, at the outset, had been one in which the intangible had been a more important factor than the tangible. It had called for faith. But, as Mr. Strike put it, faith has always far more possibilities than doubt.

Soon the Commission had to meet another crisis. Was it to leave power production to private enterprise or was it to enter the power generating field itself?

Mr. Strike reminded his audience that this decision had to be made during the

first world war when private enterprise was a giant and no one challenged its supremacy in any sphere. At that time Queenston, to many, "loomed up as a great foreboding giant, dark and menacing—an undertaking, the cost and risk of which would completely overwhelm the whole Hydro enterprise."

Again, the cost and risk, said Mr. Strike, were weighed against the revenues and the benefits. An effort was made to assess both the tangibles and the intangibles, and the decision was made not only to purchase two of the established power plants at Niagara Falls but to proceed with the construction of the Queenston power development.

Hydro's Faith Justified

"Let us never forget," said the speaker, "that if doubt had won the day in that decision, the economic history of this province would have been of a very different character."

The availability of cheap power, which the Queenston development made possible, had, Mr. Strike pointed out, completely justified the undertaking.

Later on further critical decisions had to be made with regard to further power developments, acquisition of plants and power contracts. Doubts and criticisms were entertained about some of the moves the Commission made, yet they proved to be of inestimable value in enabling Hydro, through the expansion and consolidation of its electrical services, to contribute materially to Canada's share in the winning of the greatest war the world had known.

"Now, gentlemen," said Mr. Strike, "we come to 1947, and once again Hydro faces great decisions. In fact," he added, smilingly, "as far as I am concerned, we seem to face a new crisis every hour on the hour."

Everyone realized that during the past few months there had been a power shortage in the province. In company with comparable estimates all over the world, the Commission's estimate of surplus power available after the war had been a miscalculation. There had been no falling-off in the consumption of electricity, which would have given the Commission an opportunity to set its house in order, but a very definite increase.

"In fact," pronounced the speaker, "there is every indication that the former basis upon which yearly load growths were estimated will have to be abandoned for more sharply rising curves caused by new industrial practices and installations and the more widely used and steadily increasing number of domestic appliances."

The Hydro Commissioner had, however, some good news. The power shortage, as far as this season was concerned, was practically over. He added that the successful bridging of a very critical period in power supply had, in large measure, been made possible by the splendid cooperation of the local Hydro commissions and their staffs and also by the fine support given by industries and the general public in the carrying out of voluntary economies with regard to both peak and energy loads. He wished to express, on behalf of the Commission and its staff, sincere appreciation.

Future Picture

With regard to the possibility of a power shortage recurring next December, Mr. Strike frankly stated that the Commission could not hope to be in a comfortable position to meet mid-winter demands until 1950—perhaps even later if the load demand continued to increase. At the same time, the Commission was bending every effort to reduce any possible future shortage to an absolute minimum.

Looking ahead over the next few years with their difficulties and problems, the future presented a picture which invited every reasonable hope and confidence. In addition to the water power developments now being carried out at DeCew Falls, Ear Falls, Stewartville, Aguasabon and Des Joachims, new developments were being studied at Mountain Chute on the Madawaska, at Cheneux and Cave on the Ottawa, at Pine Portage on the Nipigon and at Manitou Falls on the English River. (This was, of course, not taking into account the St. Lawrence Seaway project, which, if undertaken, would mean, from the power development angle, an addition of more than 1,000,000 horsepower to the resources of the Commission.)

Referring to the proposed frequency changeover in the Niagara district of

(Continued on page 32)

SAYS MORE ELECTRICITY NEEDED TO MEET PERIOD OF EXPANSION

Premier Drew, In Address To O.M.E.A.-A.M.E.U. Convention, Defines Government's Responsibility — Urges Hydro's Proud Record Be Maintained By All-round Co-operation In Developing Electrical Services To Meet New Growth Requirements Of Province

With Canada and Ontario standing on the threshold of the greatest period of expansion in history, more and more electricity will be required not only for industry now here and under construction, but for industry which wants to come and which will do so only if assured of long-term, sustained power supply.

In making this observation at a joint gathering of O.M.E.A.-A.M.E.U. delegates at the recent annual conference, Hon. George A. Drew, Premier of Ontario declared: "No higher responsibility rests upon the government of Ontario and upon the co-operating municipal organizations than to take every effective step which is necessary to assure the production, the transmission, and distribution of power on a scale which will make it possible to develop and utilize our unparalleled opportunities."

Few people, continued Premier Drew, anywhere in the world had benefited more from the use of electricity than the people of Ontario. For that very reason, few areas in the world were so dependent upon expanding sources of electric power. That, the speaker declared, was the simple proposition with which they were confronted in Ontario today. Because of a highly developed industrial organization and the assurance of large supplies of electric energy, the Province of Ontario had produced more than half of the total industrial output of Canada during the war years, and in that way had carried its full share of Canada's great achievements in the industrial production of war materials.

Hydro's Proud Record

"That proud record in the history of Canada and of this province," continued Col. Drew, "was made possible by the combined efforts of The Hydro-Electric Power Commission of Ontario and of all the local municipal Commissions and boards represented in such large numbers here today. It was a splendid example of good will and technical co-operation which offers convincing proof of our ability to achieve whatever objective we set for ourselves in the years ahead."

The Premier recalled that his own direct contact with the Hydro Electric Municipal Association went back to the days after the first great war. It was, he

said, now nearly 25 years since he had first attended a meeting of that association as a representative of the Light and Heat Commission of Guelph. He said that he recalled that fact simply to illustrate what striking changes had taken place in such a short time. At that first meeting the primary load of the combined systems of the Hydro-Electric Power Commission amounted to approximately 500,000 horsepower and the capital investment was about \$75,000,000. Last year the primary load had risen to 2,586,000 horsepower and the capital investment in the combined Hydro-Electric systems was \$408,432,000. Within the period of his own direct contacts with the association, the speaker stated, the power load had been multiplied five times and the capital investment nearly six times, while the activities and capital investment of the local municipal associations had been similarly expanded.

Government's Responsibility

Continuing, Premier Drew declared: "There is little similarity between the huge four hundred million dollar enterprise of 1946 and the first hopeful undertaking of forty years ago when the main purpose of the Commission was to provide transmission facilities from the private power producers to the municipal consumers throughout the Province. Today this is the largest undertaking in the Province of Ontario. It is an undertaking upon which industry, hospitals, homes, agriculture, dairying and an endless variety of activities almost wholly depend. That undertaking must not only be the largest but it should also be the most efficient organization in Ontario. The ultimate responsibility for assuring adequate power supplies rests upon the Government of Ontario as the servants of all the people of Ontario. The statement of that simple truth challenges no fundamental principle but recognizes the statutory and legal basis upon which the Commission was created and operates."

At another point in his address, the Premier said: "The Hydro-Electric Power Commission of Ontario is a corporate public body by virtue of the powers conferred upon it in the Hydro-Electric Power Commission Act which was passed many years ago by the Government of Ontario and has been amended

every year since then by succeeding governments. The Commission acquires its legal entity, its operating authority and its financial powers from no other source.

"The composition of the Commission and the duties of the Commissioners who are called upon to direct its affairs," he continued, "are also set forth in the same Act, and ever since the Commission was created, it has been the duty and the responsibility of the Government to appoint the commissioners and to make such amendments to the Act as will improve the operation of the Commission's activities.

"The legislative responsibility for an effective statute which will from time to time extend and improve the powers and operating facilities of the Commission along with the sole responsibility for the appointment of the Commissioners who will direct its affairs," said Col. Drew, "imposes upon each succeeding government of the Province of Ontario the inescapable obligation to make us sure that the Commissioners who are appointed, and the Act under which they direct its affairs must assure the maximum efficiency of that great organization upon which our present prosperity and happiness so largely depend and upon whose expansion the future expansion of this province must rest. The present Government of Ontario accepts that responsibility and will do its duty to the best of its ability on behalf of all the people of Ontario."

Anticipating Power Needs

It was essential, declared the Premier, that every step be taken to assure adequate supplies of power next winter so that rationing might not be necessary. "Our combined efforts, however," he continued, "must go far beyond that point. Your president, for instance, is not unaware of the names of several very large companies which are waiting to start in Ontario and create employment for many thousands of workers. Their decision to start construction is being delayed at the moment only by their inability to obtain a definite assurance of uninterrupted power supply. Many of you at this meeting have similar knowledge of similar situations in other parts of Ontario. No stone must be left

returned to add to our resources of power as rapidly as possible in every part of this province."

Premier Drew next pointed out that there was the tremendously important task of extending rural electrification as rapidly as possible to every area where that was practical. It was true that extension has been held up by shortage of wire, of manpower, and of poles. But even if all supplies were available they might quickly get beyond their available power resources for those expanding services unless they added greatly to the available power in all the supply areas throughout the whole province.

Reorganization Planned

"I said before in an earlier public statement," continued Col. Drew, "that the Government has confidence in the efficiency and loyalty of the technical staff and workers of the Hydro-Electric system. May I take this opportunity to pay the most unreserved tribute on behalf of the people of Ontario to the magnificent work done by the linemen and other maintenance workers of the Hydro-Electric System during this past winter. The Hydro-Electric System has good engineers, has a good technical staff, and it has men and women upon whom the

people of Ontario can with confidence impose their trust.

"But," he said, "organization has not kept pace with the tremendous expansion of these past few years. As the largest enterprise in the province, it must have an organization in keeping with the scope of its activities, and it must, above all, have an organization which makes it possible to co-operate day by day and in every detail with those municipal organizations which are so closely and inseparably associated with it in the supply of power to the people of this province, whether it be in their homes or in their daily work.

"The Commission," he continued, "in consultation with the Government, has followed the same procedure which has been adopted by other large organizations to meet a similar situation. Outstanding experts in the field of management, finance and engineering have been engaged to examine the whole organization and make their recommendations. May I point out that neither the Commission nor the Government is committed to any set programme nor bound to follow any particular recommendation. I have no doubt however that the recommendations which will be made will form the basis for many advances which will be most helpful, particularly in view of the fact that this inquiry is being conducted

with the wholehearted co-operation of the engineers and officials of the Hydro-Electric Power Commission."

Frequency Problem

In engaging the services of the particular firm of engineers who had been employed, Col. Drew said that due consideration had been given to the fact that one of the most important decisions ever faced by the Government, the Commission and the Hydro-Electric municipalities was the course to be followed in regard to the frequency of the electric energy supplied throughout this province. In seeking independent advice it was essential that those who were asked to advise should have had actual experience in this field. The engineers who were doing this work had had the most extensive practical experience in this particular field of any engineering organization in the whole world.

The Premier said he did not intend to indicate any specific detail of action which would be taken either by the Government or the Commission. They believed that with the independent experts who had been appointed and the advice of the engineers and other experts of The Hydro-

(Continued on page 32)



HERE ARE the 1947 officers of the Association of Municipal Electrical Utilities, from left to right, back row: Ray Plaff, St. Mary's; R. S. Reynolds, Chatham; V. A. McKillop, London; O. H. Scott, Belleville; R. P. Darrell, treasurer, H.E.P.C.; R. S. King, Midland. Front row, left to right: J. E. Teckoe, vice-president, Galt; J. R. Sullivan, president, Woodstock; W. R. Harmer, secretary, H.E.P.C.; R. J. Smith, past president, Perth.

O.M.E.A. SEEKS ADDITIONAL DATA ON PROPOSED FREQUENCY CHANGEOVER

Resolution Asking Opportunity To Study Final Report Before Decision Is Made, Endorsed At Convention — Representation On Commission, Legislation Affecting Hydro Operations, Adequate Wiring And 8 Per Cent Tax Also Discussed

While recording no official expression of opinion on the proposed frequency changeover from 25 to 60-cycle in the Niagara Division of the Southern Ontario System, delegates to recent O.M.E.A. convention in Toronto on March 4 and 5, passed a resolution asking that the O.M.E.A. have an opportunity of studying the final report before a decision is made.

This resolution, moved by J. S. Beck of Brampton, and seconded by W. E. Wright of Toronto Township, read:

"That representations be made to the Ontario Government and to The Hydro-Electric Power Commission of Ontario that no final decision be made regarding the proposed changeover from 25-cycle to 60-cycle power until this Association has had time and opportunity to consider the final report and other recommendations in this matter."

R. M. Durnford, the president of the O.M.E.A., was asked to name three representatives of the association to sit on the A.M.E.U. committee whose members are engaged in making a further examination of the problems involved in the proposed frequency change. These appointees, announced since the convention, are: J. B. Hay of London; Loftus H. Reed of Toronto; and George F. Hutcheon of Huntsville.

Another question discussed during the session devoted to resolutions was that of O.M.E.A. representation on the Commission. The resolution, which was endorsed, read, in part:

"That in the event the H.E.P.C. is enlarged to five members, two of them shall be elected by the Ontario Municipal Electric Association; but in the event that the number of the Commission be left at three, then one shall be elected by the O.M.E.A. And that the member, or members, so elected shall hold office during the pleasure of this Association."

Recognition Wanted

A few of the delegates present thought that the Association's representation on the Commission should predominate. In the event of the three-man Commission continuing, they favoured two of the members being elected by the O.M.E.A. Should the Commission be enlarged to five, then they held that the Association should be represented by three. This view was embodied in an amendment to the resolution, and a lively discussion ensued.

Speaking both to the amendment and the resolution, J. S. Beck, mayor of Brampton, apparently crystallized the general opinion when he stated that, while he steadfastly opposed any intrusion of politics in Hydro, the Government, because of its constitutional authority in the broader realms of public policy, could scarcely be expected to relinquish a majority control of the Commission. He suggested that what the O.M.E.A. actually wanted was a satisfactory recognition of its position as the responsible representative of the Hydro municipalities. This position would be clarified beyond any possibility of doubt by the election of a minority membership on the Commission which would be responsible to the Association. After further discussion, the amendment, being put to the question, was rejected, and the original resolution carried by a substantial majority.

A resolution regarding pending Hydro legislation had been drawn up by the A.M.E.U. in respect to that Association's own field of operations and had been sent on to the O.M.E.A. through the Inter-Association Committee. It was worded as follows: "That the A.M.E.U. executive consider the desirability of asking The Hydro Electric Power Commission of Ontario, through its legal department, to inform the constituent Hydro municipalities of annual revisions of legislation which directly or indirectly affect their operation, together with the legal department's unofficial interpretation of this legislation." To this the executive committee of the O.M.E.A. had added the rider: "That we ask the H.E.P.C., or the Government, or both, to advise the O.M.E.A. legislative committee of any pending legislation which may affect The Hydro-Electric Power Commission of Ontario."

Both the A.M.E.U. resolution and the O.M.E.A. postscript carried, practically unanimously.

That the O.M.E.A. intends to persevere in its efforts to have the Dominion Government tax of 8 percent on domestic Hydro bills removed was evident from the passing of a resolution asking for this relief. This resolution will be forwarded to Ottawa to bolster previous petitions by the executive committee.

Another resolution which was carried without discussion was to the effect that the Government and "the powers that

be" do everything possible to keep Hydro free from politics and political influences.

Licensing Electricians

A resolution passed at a meeting of O.M.E.A. District No. 4 urging the H.E.P.C. to set up boards for the licensing of electricians in Ontario was referred to a special committee for consideration.

M. J. McHenry, as president of the Electric Service League of Ontario, was called upon to present a progress report on the activities of that organization.

The report outlined how the new league was continuing and elaborating the famous Red Seal work of the old Electric Service League of Toronto in a province-wide advocacy of adequate wiring. It pointed out that the League was supported by the O.M.E.A., the A.M.E.U., the Canadian Electrical Manufacturers' Association, the Canadian Electrical Distributors' Association, and the Commission. (Included on its Board of Governors are four representatives of the O.M.E.A., six from the A.M.E.U. and two from The Hydro-Electric Power Commission of Ontario.) He pointed out that from March 18 to May 1 the League, with the co-operation of Hydro, was conducting schools of one-day duration at 13 centres in Southern Ontario. These schools were primarily intended for the training of Hydro men as local Red Seal representatives, and the attendance of local contractors was strongly urged. It was explained that, through the arrangements with the H.E.P.C., the municipalities automatically were members of the Electric Service League of Ontario.

Deferred Resolutions

Several resolutions were presented to the convention which, it was felt, required further examination and consideration. One of these formulated a request to the H.E.P.C. to give immediate consideration to the disposition of the Rate Stabilization Fund so that member municipalities might have such monies available to enter into local extensions and improvements. Supplementary resolutions relating to this fund and to special contingency charges were also deferred.

A resolution asking the H.E.P.C. to investigate and report on the feasibility of constructing a steam plant in the Windsor district was set aside to await the final reports on frequency standardi-

(Continued on page 32)

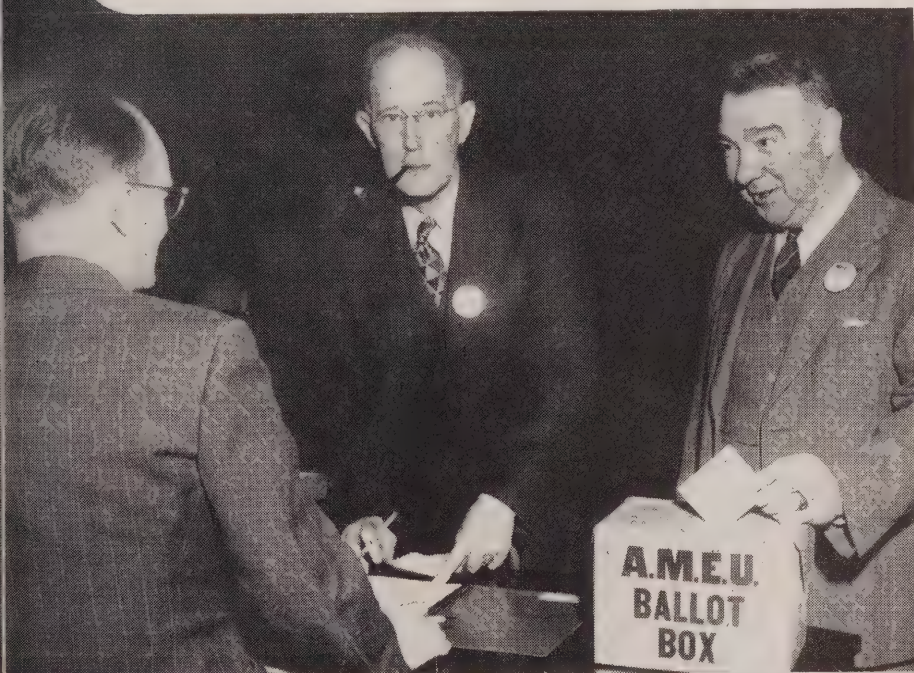
WORK TOGETHER
for BETTER LIVING

JOBS
PURCH
POWER

"SO THE sales' gear turns, starting the jobs rolling and at the same time purchasing power gets under way." Cy Burg, with this observation, was reaching the climax of his address at the joint luncheon of the O.M.E.A. and A.M.E.U. and their guests, the Electric Club of Toronto.



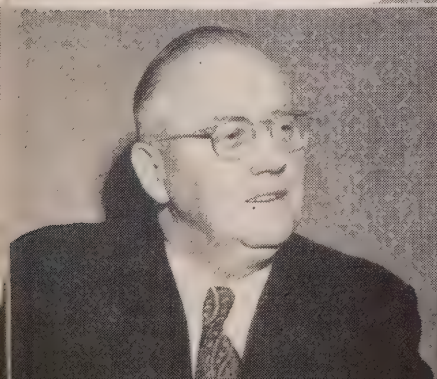
MISS LULU BEATTY of Port Hope, (above) reported to have been the only lady delegate at the recent conference has attended five A.M.E.U. meetings and says that she finds them educational as well as entertaining.



HAROLD K. HILLIER of the Commission's promotion department checks the registration forms and prepares the ballots for voting as Jim Wickiam, superintendent, East York Township Hydro-Electric Commission, drops his vote in the box. H. G. Hall, secretary and manager, Ingersoll Public Utilities Commission, marks his ballot and looks up just as the flash bulb goes off.

THIS QUEUE of men were getting their railway fares adjusted for the return trip home. Heading the line-up is J. K. Martin, chairman of The Hydro-Electric System, Beachville.

HERE IS J. R. Sullivan (below) manager, Woodstock Public Utilities Commission, who is the new president of the A.M.E.U. Mr. Sullivan graduated from McMaster University and from the School of Practical Science, University of Toronto. He is a member of the Society of Professional Engineers.



IN BETWEEN sessions, Hydro News got this interesting shot of Loftus H. Reid and Bert Merson of the Hydro-Electric System, To-

DEMOCRACY IS SUBJECT OF STIRRING ADDRESS AT CONFERENCE DINNER

Joint O.M.E.A.-A.M.E.U. Gathering of 1,000 Delegates Hear Hon. Orlo M. Brees Of New York

In formal dinner dress and with a boyish smile playing round his lips, a slim, dark American with dark, twinkling eyes, stepped up to the lectern in the Concert Hall of Toronto's Royal York Hotel on March 4 and in one of the most stirring and memorable addresses ever delivered at a joint annual conference dinner of O.M.E.A. and A.M.E.U. delegates, numbering over 1,000 this year, presented his conception of "Our Way of Life In This Western World."

The speaker, Hon. Orlo M. Brees, coal miner, textile worker, salesman, teacher, printer, author, editor and a member of the New York State Legislature since 1940, unfolded his story in a clear, rich voice whose charm was enhanced by a subtlety of inflexion which accentuated the delightful humour of his anecdotes and the depth of sentiment expressed in his own verse.

At the outset, as he regaled his audience with a rapid-fire flow of sparkling humour, the spacious concert hall reverberated to the laughter of his eager listeners, and later as the more serious aspects of his address were unfolded, a pin falling on velvet would have been a distraction.

Quietly, earnestly and even grimly, he warned of the menace of dictatorship in any form; of the plans of those who would undermine democracy and all for which that way of life stands. The democracy of which he spoke was not just the right to vote, not just freedom of speech and freedom of the press but the future of that small boy who confidently placed his hand in the hand of his father.

Our Way Of Life

There were, in Mr. Brees' opinion, three ways in which our way of life could be regarded. First, he thought of it as a heritage, secondly as a personal responsibility, and thirdly as a destiny. He pointed out that he believed all men were created equal.

"It isn't that everybody has the same size of basket, but every individual is entitled, no matter how small or how large his basket may be, to having it filled," he said.

If we were created equal, the speaker continued, then each was equal in responsibility. That being the case there rested upon each a responsibility, both political and economic. Free men, he said, were free from fear and want, and



HON. ORLO M. BRES

that was a splendid ideal, but it must be remembered that it could not be accomplished by government aid alone, it had to be done by individual effort.

Mr. Brees pointed out that the free man's life, if he were to remain free, was always a life of hazard. If you took all hazard out, and took away the possibility of man's failing, then at the same time he was robbed of the possibility of succeeding. There were some men who were spurred to success by the fear of failing.

Our present way of life, the speaker stated, was a way of tolerance which was so well expressed in the practical side of Voltaire's philosophy when he said: "I disagree violently with everything you have to say, but I would fight to the death for your right to say it."

There was no place in their western way of life for intolerance, Mr. Brees said, and they had to learn to live in peace and harmony. He pointed out that the western way of life was also a way of understanding, and he liked to think that one could tell a westerner by the fact that he did not jump at conclusions, but obtained all the available evidence and then kept his mind open for new ideas.

"Don't allow yourself to be possessed by a prejudice," he said, "and don't jump at conclusions."

CY SAYS SNAPPY SUIT HELPS SALES SOAR

To convince his audience that the salesman with the red necktie and the snappy grey suit gets the most orders, Cy T. Burg, vice-president in charge of sales of The Iron Fireman Manufacturing Company, Cleveland, Ohio, climaxed his speech by throwing half a dozen cravats of the hottest red shade to delegates of the O.M.E.A.-A.M.E.U. convention, and their luncheon guests, the members of the Electric Club of Toronto.

Naturally, Mr. Burg was aware of the interest his audience placed in his ideas of dress so he explained how it all came about. "It happened during the midst of the depression," he stated, "when one gloomy grey morning a caller was announced at my office, and through the door came one of the sorriest looking salesmen I have ever seen. His approach was apologetic, and the most striking thing about him was his clothing—a sombre, dark suit, a dark hat that had seen better days, black shoes, and to top it all off, a black necktie."

At this point, Mr. Burg, to illustrate how gloomy his caller looked, slipped on a dark jacket, hooked a black tie on and stuffed a battered fedora of the same shade on his head.

Got To Thinking

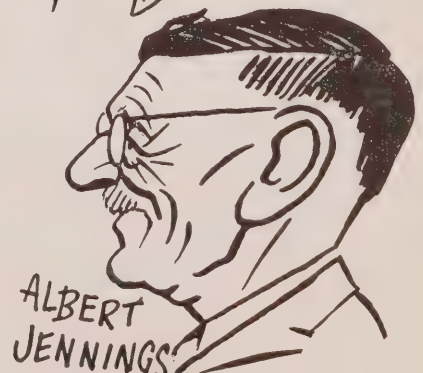
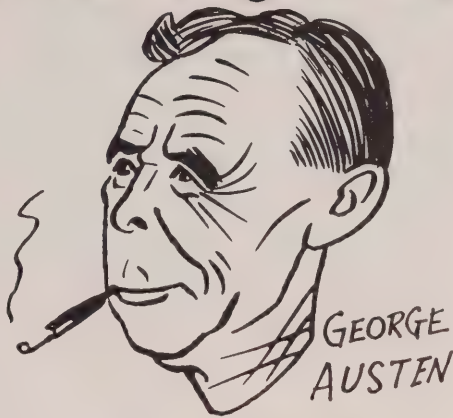
"Even before he had a chance to open his mouth I began to feel gloomy," continued the speaker, "and before he had finished, I felt so gloomy also that I was afraid to buy anything. Then I got to thinking."

"Supposing that salesman had come in radiating optimism and progress, I thought. Suppose, even though it was a dark morning, that instead of that sad get-up, he had worn a good-looking grey suit and hat—and a cheerful red necktie?"

Then Mr. Burg related how he had tried it on his own sales force and how the results had been reflected in increased sales. During the depression years before the war, Mr. Burg concluded, the best get-up for promoting sales was just such an outfit and in winter as well as in summer his men were a familiar sight in their natty suits.

"All our salesmen now wear the same bright clothes—when I'm in town anyway," Mr. Burg added with a smile. "It makes them feel more enthusiastic and more optimistic."

Convention Caricatures





DR. R.W.I. URQUHART MEDICAL DIRECTOR

APRIL SHOWERS

We all know the old saying about April showers and May flowers and recognize the necessity of water if our lawns and gardens are to grow and flourish. Few of us realize just how important a part water plays in our own living processes.

Water is essential for all living things. Oxygen of course is of first importance in maintaining life; water is next and food last. About 70 per cent of the body consists of water. A loss of 10 per cent of this water content is serious, and a loss of 20 per cent results in death. Animals whose natural habitat is in the dry areas of the earth are provided by nature with special mechanisms to store or save water. The camel for example, has a series of stomachs in which water can be stored. In emergency, water can be obtained from the huge quantities of fat in the humps. The thick coat of fine hair prevents loss of water by evaporation and the digestive tract so functions that no water is lost from it. The common household pest—the moth, is built so that it can live without water; its need for water being supplied from its own living processes.

Man however, is unable to live without water or save it to a like degree. For example, in the process of digestion during the day approximately eight quarts of water are poured into the digestive tract as digestive juices—saliva, gastric juice, etc. Of this amount about one-half a pint finally escapes by way of the bowel. Much more water is lost through the skin in perspiration and by way of the kidney. The supply of water to the body, therefore, needs constant replenishment. It is this demand of the body for water that produces thirst.

Quantities Of Water Necessary

The average daily diet in this climate contains about a quart and a half to two quarts of water. The greater part of this intake comes from the drinking of

water as such or in the form of beverages. A surprisingly large amount comes from what is ordinarily regarded as solid food. So-called solid foods contain from 70 per cent to 90 per cent water. It is interesting to note that in hot countries where loss of water to the body through perspiration is great, there occurs naturally an abundance of foods which are particularly high in water content. Water is also derived from the breakdown of the solid parts of so-called solid foods. Fat gives the highest yield of water. In the Arctic regions, fat forms a large part of the diet and supplies a relatively high proportion of the water needs in the population of that region.

The output of water roughly balances the intake. Under ordinary conditions of moderate activity, a little less than half the intake is lost to the body through the lungs in the expired air and through the skin as perspiration. The balance is excreted by way of the bowel and the kidneys.

Under conditions of increased activity, there is an increased amount of water lost through perspiration and a corresponding decrease in the amount lost through other channels. With extreme and continued perspiration, there is a loss of salt as well. It is for this reason that salt tablets are supplied for the use of workers subjected to strenuous physical activity in locations where the temperature of the surrounding air is high and perspiration great. Under these conditions the intake of water alone may produce what is known as Miner's Cramp, since it was first observed in mine workers. The addition of salt to the water prevents this condition from occurring and keeps the worker much more comfortable. It should be pointed out, however, that the use of salt in this way is necessary only under these extreme conditions.

Variations In Water Habits

Enough has been said to indicate the importance of water in the process of living. It is obvious that adequate

amounts are necessary to ensure health. One finds enormous variations in the water habits of individuals. For the most part people are inclined to take too little water rather than too much. An average intake of four to six glasses a day in addition to the usual beverage at meal times, is advisable. These quantities should be increased materially during the hot weather.

One should be sure that the water that is taken is safe to drink; it must be free from the germs of disease. Typhoid and the dysenteries are produced by germs that most commonly are found in contaminated water. These germs are deposited in the excreta of infected persons, so that if sewerage conditions are imperfect the soil may become contaminated. The germs may thus get into the water supply. Proper sewage disposal systems, care in choosing water sources, and the chlorination of water have almost eliminated these diseases. The last outbreak of Typhoid that occurred in Toronto, Ontario, was due to a break in the water intake pipe in 1929. Since that time the occasional case that is seen can be traced usually to contaminated water or milk in the country districts.

At this time of the year, particularly when melting snows and frequent rains produce abundance of surface water which may be contaminated, it is advisable to scrutinize water sources carefully. If there is any possibility that the supply may be contaminated by surface water, tests should be made and the water boiled or treated with chlorine, until one is satisfied that the water is safe. Whether or not this possibility exists, water testing is a routine procedure throughout the holdings of the Commission. In established locations tests are made regularly in the Spring and Fall, and at other times as indicated. In new developments, they precede the establishment of a camp. The Provincial Department of Health supply test bottles for water analysis and also chlorine sets at small cost. If there is any doubt about the water supply, make use of their services.

PRESENT PROBLEMS FACING HYDRO OUTLINED BY O.M.E.A. PRESIDENT

R. M. Durnford In Annual Conference Address Urges That Details Of Proposed Frequency Changeover Be Interpreted In Everyday Language — Stresses Need For Close Co-Operation With A.M.E.U. And Pays Tribute To Work Of Hydro Linemen's Training School

Important problems which face Hydro and the Hydro municipalities were discussed by R. M. Durnford, president of the Ontario Municipal Electric Association, in his opening address to the Association on the occasion of its annual convention in the Royal York Hotel, Toronto, on March 4 and 5. The proposed frequency changeover in the Niagara area of Southern Ontario, the relations between his own Association and the Association of Municipal Electrical Utilities, power conditions in the province, the work of the new Electric Service League of Ontario and the importance of the Hydro Linemen's Training School were all touched upon in a comprehensive and businesslike summary of the year's activities.

Ranking first for consideration, Mr. Durnford said, was the proposed frequency conversion. The question of the desirability of a uniform frequency, as such, had had little or no opposition. The question of making that frequency 60 cycles was likewise almost unopposed. That there would be practical exceptions to this uniformity in the case of certain industries in proximity to Niagara was evident from the time study of the problem began. Certain other exceptions might also be considered justifiable when weighed in the balance of expert consideration, but none of these exceptional cases should be allowed to becloud the major issue. A fully integrated system for Southern Ontario was conceded as highly desirable and this could best be accomplished by standardization at 60 cycles.

Distribution of Costs

There was, however, Mr. Durnford stated, one point which was causing concern to local commissioners. That was the suggestion that the municipalities should carry their own costs in converting their local distribution equipment. Dealt with in terms of totals and averages, this proposition looked feasible because the sum total of reserves seemed adequate to meet the total estimated cost of \$35,000,000. However, it introduced consideration of a wide variety of circumstances in different municipalities, and the net result on the rate structure of individual municipalities was feared because of the lack of uniformity in the financial positions. It had, Mr. Durnford affirmed,

been openly suggested that this was the principal problem in the conversion programme and that it required further investigation and review, with the idea of finding a formula that would level out the inequalities.

Said Mr. Durnford: "When we finally arrive at the point where we know with reasonable assurance what the cost will be for us as communities and individuals, we can then make up our minds whether we want it (60 cycle frequency). Then will come the biggest question of all—are the advantages, considered from all angles, big enough to convince us that we must have this major operation performed—yes, even regardless of the cost?"

The president of the O.M.E.A. stressed the importance, as it seemed to him, of being "sold" on the advantages of the proposed frequency change. This job was no casual assignment for the engineers alone. Their thoughts on the subject, he believed, should be translated into everyday language by public relations experts, assisted by the latest technique of advertising and of informing people. Some of the expositions on the benefits of frequency changeover, he felt sure, had been too intricate and technical for the average layman, and, as a result, many of the local commissioners had gone home from meetings with an incomplete and somewhat hazy picture in their minds. Mr. Durnford hastened to explain that he voiced no criticism of the ability and skill of those who made the presentation but he felt that the A.M.E.U. and others who had taken on the job had a task to perform in interpreting the details of conversion on the local level of technical understanding.

Need More Information

"Summing up our interpretation of the present position," continued Mr. Durnford, "it would appear that we still lack information that is complete and comprehensive enough to warrant us passing judgment on the final issue as an Association. Your executive has seen fit to present a resolution to the Resolutions Committee for the official consideration of the Convention, which, I think you will find harmonizes with what I have said."

Mr. Durnford reminded his audience that the H.E.P.C. interim report was distinctly labelled an "interim" report and as such made no pretence at a final

judgment. A study of the report also showed it to be lacking in any recommendation sponsored officially by the H.E.P.C. to proceed forthwith on the project. The A.M.E.U., the speaker pointed out, was still engaged in an intensive study of the subject, while outside independent consultants were exploring deeply into the whole problem.

"It has been suggested at various meetings by H.E.P.C. officials," Mr. Durnford said, "that much depends on the wishes of the municipalities. The logical inference is that we would be expected ultimately to express our opinions individually as municipalities by means of a poll, conducted either by the H.E.P.C. or by this Association. If this procedure is to be followed, then I submit that much remains to be done, and most municipalities would prefer to wait for more specific information—more information coupled with recommendations from the H.E.P.C., from the A.M.E.U. and from this Association or its executive."

In the last analysis, said Mr. Durnford, the H.E.P.C. must make the final decision in its official form supported by such enabling legislation as was needed. The immediate task of the O.M.E.A. was, in his opinion, to follow up on its study of conversion so as to be ready for the day when its opinions and cooperation would be requested, losing no opportunity in the meantime to advance its knowledge and gain further information.

Co-operation With A.M.E.U.

Referring to the necessity of close relations and co-operation with the A.M.E.U., Mr. Durnford expressed the belief that the Hydro commissions should be ready to pay larger fees towards the support of the latter association. The O.M.E.A. should, he thought, also make bold to suggest that the A.M.E.U. organize into districts on the pattern of the O.M.E.A. and conduct more district meetings during the year. Personally, he would like to suggest that the A.M.E.U. form very active standing committees to review constantly throughout the year more of the technical problems and to develop regular exchanges of that kind of technical information that could be of mutual help to all municipalities and especially the smaller municipalities.

In regard to power supply conditions,

(Continued on page 18)

CONVENT

1. A CROSS section of the c
at the joint O.M.E.A.—A.M
ing banquet on March 4,
Hon. Orlo M. Brees, Mem
New York State Legislature
guest speaker

2. "SNAPPED" WHILE reg
the convention are: F. C
Herbert Bush, L. J. Ferrie
and Alexander McTavish,

3. SOME OF the head tabl
the joint O.M.E.A.—A.M.E.A.
shown here are: Loftus H.
Reid, W. Ross Strike, K.C.
H. Saunders, V. A. McKi
Smith, Lance Rumble, R.
ford and Premier George

4. W. ROSS STRIKE, K.C.
commissioner, addresses the
vention session. R. J. Sm
M. Durnford listen att

5. ANOTHER GROUP of
In spite of the snowbo
around Toronto at the ti
convention, the total regist
over 1,000.



IMPRESSIONS

ING BY the interested expres-
sion on the faces of this group the
must have been really "giving
out."

ER A busy day of conference
the O.M.E.A. and A.M.E.U.
s relax during the entertain-
ment period.

THIS group of delegates who
shot" while registering are W.
part and J. L. Shaw of North
and H. D. Rothwell, H.E.P.C.

OTHER SECTION of the gather-
ing taken at the Tuesday noon
luncheon.

RE DELEGATES; this time the
was the combined O.M.E.A.-
U. and Electric Club of To-
noon luncheon on March 5.

M. DURNFORD, president of
O.M.E.A., welcomes the delegates
in his opening address.

PREMIER GEORGE A. DREW ad-
dressed the joint O.M.E.A.-A.M.E.U.
Tuesday luncheon.



PRESENT PROBLEMS

(Continued from page 15)

the president of the O.M.E.A. took occasion to observe that while Hydro in Southern Ontario had been, and still was, the victim of circumstances over which there could be little control, that did not relieve the painful situation which confronted it. Everyone, he averred, was eagerly waiting to hear what the Commission was going to propose in way of plans designed to meet the power emergency.

Mr. Durnford spoke of the newly-formed Electric Service League of Ontario as now "ready to go into action." Acting as a director representing the O.M.E.A., he had attended two meetings of its executive. Its educational campaign in advocacy of adequate wiring on the Red Seal plan had a long term, province-wide objective. The League, he pointed out, had a valuable service to render to Hydro municipal consumers.

Linemen's Training School

Reference was also made to Hydro's training school for linemen established a year ago last fall in Etobicoke Township near Toronto. This school, Mr. Durnford pointed out, was anxious to serve the municipalities in larger measure. He brought it to the attention of the convention delegates as something they should patronize during the coming year on a scale more commensurate with its importance. In future years the municipalities would be in need of trained linemen. The courses given at the school imparted the best possible training and aimed to secure a uniformity of practice which would prove of the greatest possible value as the great Hydro

system became more and more co-ordinated.

The president referred to the demise of W. P. Kress of Waterloo, a member of the O.M.E.A. executive and of E. J. Blake, the chairman of the Sarnia Hydro-Electric System. Both of these gentlemen, he reminded the convention, had given long and faithful services to Hydro. There were other casualties during the year, but it was impossible for him to refer to each departed member individually.

Here Mr. Durnford remarked on the long continuity of service among such a large number of O.M.E.A. representatives. He considered it a high tribute to the type of men who held office on the Hydro commissions throughout the province.

Officers For 1947

Officers elected for the ensuing year are as follows: president, R. M. Durnford, Sarnia; past-pres., W. R. Strike, K.C., Bowmanville. Vice-presidents: T. E. Andre, Kingston; G. F. Hutcheson, Huntsville; C. H. Moore, Fort William; J. G. Reid, Port Credit; R. Thomson, Paris; G. W. Gordon, Kitchener; H. R. Henderson, Woodstock; G. H. Fuller, Windsor. Directors: District No. 1, M. P. Duff, Belleville; Jas. Halliday, Kingston. No. 2, W. Dixon, Arthur; W. E. Theaker, Paisley. No. 3, R. G. Walsh, Port Arthur; M. J. McDonald, Port Arthur. No. 4, W. E. Wright, Toronto Twp., A. G. Jennings, East York. No. 5, Geo. Austin, Dundas; Wm. Watterson, Welland. No. 6, H. O. Hawke, Galt; F. E. Welker, St. Jacobs. No. 7, J. B. Hay, London; P. R. Locke, St. Thomas. No. 8, Chas. Austin, Chatham; W. P. Bolton, Windsor; secretary-treasurer: Mrs. K. Kestell, Guelph.

79 MUNICIPALITIES NOW ENJOY BENEFITS OF INSURANCE PLAN

Since March, 1946, four municipal authorities have been added to those included in the Municipal Hydro-Electric Pension and Insurance Plan, according to a committee report presented at the recent annual convention of the Ontario Municipal Electric Association. The total number of municipalities deriving benefits from the scheme was stated to be 79 at the close of the past year. The total number of employees participating was 3,084, and the total amount of life insurance benefit in force was \$7,850,935. Death claims totalled 335, involving the sum of \$779,130.

It was announced that the war service agreement, which provided benefits for employees while serving in the Armed Services, was closed out as of August 1, 1946, and that the seven employees who were at that time covered by the agreement, were, through the co-operation of the insurance companies, transferred to the regular agreement. The balance which remained in the war service account had been credited to the joint deposit account.

At the present time, it was reported, the committee was considering making representations to the Federal Government in regard to the 1946 amendment to the Income War Tax Act respecting the method of taxing lump sum payments from superannuation or pension funds. The whole of such lump sum, instead of only a part as formerly, is now said to be accountable by the recipient as income.



EXECUTIVE MEMBERS of the Ontario Municipal Electric Association shown here are from left to right, back row: W. E. Theaker, Paisley; G. F. Hutcheson, Huntsville; J. R. Pattison, Fort William; W. E. Wright, Toronto Township; Charles Austin, Chatham; Richard Thomson, Paris; H. E. Henderson, Woodstock. Front row: James Halliday, Kingston; A. G. Jennings, East York Township; C. H. Moors, Fort William; Mrs. Kathleen Kestell, secretary-treasurer, Guelph; R. M. Durnford, president, Sarnia; C. J. Halliday, Chesley; K. A. Christie, K.C., Toronto; Dr. W. J. Chapman, St. Catharines.



THESE TWO delegates to the O.M.E.A.-A.M.E.U. annual convention probably travelled the greatest distance—all the way from Kenora, Ontario. On the left is J. V. Fregeau, chairman of the Kenora Public Utilities Commission, and on the right is Fred Green-slade, superintendent.



THESE THREE gentlemen (above) were "snapped" just before going into the first morning session. They are left to right, F. C. Powell, Erieau; Charles Austin and mayor R. D. Steele of Chatham.



NO! F. H. PLANT of Ottawa is not feinting with his left, but is merely accentuating a conversational point to G. E. Chase of Bowmanville.



NO O.M.E.A.-A.M.E.U. convention would be complete without the "Three Musketeers." They are from left to right: J. R. Pattison, Fort William; A. G. Jennings, East York Township; and C. H. Moors, Fort William.

IN THIS pensive group on the right we have J. G. Brown, G. W. Gordon and S. E. Preston of Kitchener with B. Faichney of the H.E.P.C.



ALTHOUGH THE snow storm delayed them, these two gentlemen from Stayner arrived in time for the latter half of the convention. They are, mayor W. A. Blackburn, left, and J. F. Linn, secretary and commissioner.

"PROS" AND "CONS" OF CHANGEOVER SUBJECT OF DEBATE AT CONFERENCE

By Special Invitation, Keith Of Windsor And Buchanan Of London Assume Positive And Negative Roles
Respectively — Fine Addresses Acclaimed By Joint O.M.E.A.-A.M.E.U. Gathering

Something of a departure from ordinary procedure took place at the annual convention of the Ontario Municipal Electric Association and the Association of Municipal Electrical Utilities when a debate was substituted for the customary question period. The debaters were J. Clark Keith of Windsor and E. V. Buchanan of London, who had been invited by the O.M.E.A. to present arguments for and against the proposed frequency conversion.

Mr. Keith, who was called upon to present the case for the proposed changeover, pointed out that it was fundamentally a proposal for standardization. This, he stated, might be briefly defined as a method of co-ordinated effort to improve efficiency.

Stealing a march on Mr. Buchanan, Mr. Keith admitted that the one indisputable advantage of 25-cycle frequency was that in the heavily-industrialized sections of Southern Ontario we already possessed it. Additional bulk energy at 25 cycles, he added, could be provided more cheaply than at other frequencies. There were some advantages in transmission, and, of course, by retaining this frequency, the cost of a changeover would be saved. At 25 cycles, voltage regulation on distribution systems was somewhat easier to accomplish, and the lower frequency was preferable for the slow speed motors used in certain heavy industries.

"That", pronounced Mr. Keith, "just about sums up the case for 25-cycle. I have not heard a single individual admit, or even suggest that if the Commission were embarking anew today on a province-wide distribution of power that any other than 60-cycle frequency would be considered."

Industries And Frequency

One of the most unconvincing arguments, in the speaker's opinion, against the proposed changeover was that increased power costs would drive industries out of the converted 25-cycle areas and perhaps out of the province altogether. Amid laughter, he said that he was prepared to believe that the existing 25-cycle frequency might drive them out—certainly the cost involved in the proposed standardization would not. More seriously, he went on to say that, except for certain basic industries and metallurgical plants—and these would continue to receive 25-cycle power under the conversion plan—the cost of Hydro for in-

dustry generally throughout the province was so low that it had little if any bearing on the choice of industrial locations. Investigations carried out in his own city of Windsor, Mr. Keith said, had shown that an increase of as much as 25 percent in power rates would only increase the cost of production of \$100.00 worth of merchandise by 35 cents. He did not think that this was a matter of grave concern for the manufacturer.

Reviewing the advantages of the proposed changeover from the point of view of the electrical services supplied by the Commission and the Hydro municipalities, Mr. Keith pointed out that conversion would permit complete integration of the Niagara division with the 60-cycle Georgian Bay and Eastern Ontario divisions. This would make future expenditures for large frequency changer stations unnecessary, while the flexibility of operation of such a unit system would permit much more efficient use of the watersheds at present developed, with their inherently different characteristics.

Changeover would allow of interconnection with adjacent 60-cycle systems in Quebec and in the states of New York and Michigan, subject, of course, to mutually satisfactory agreements. Such interconnection would be valuable, the speaker said, since it would permit reduction of reserve generating capacity in the Hydro system, with increased flexibility of operation and the creation of potential markets for off-peak power.

Advantages Of 60-Cycle

If the proposed conversion were carried out, Mr. Keith believed that it would result in substantial savings in the capital cost of steam-electric generating plants, whose construction loomed up as a distinct future possibility. In this connection, he pointed out that 60-cycle equipment for steam plants would be less costly than 25-cycle custom-built units.

With regard to industrial consumers, Mr. Keith said he felt that they would stand to benefit considerably from 60-cycle power. Practically all new developments for the utilization of electric power were first made for 60-cycle operation. The fact that conversion would allow the immediate use of such new developments would undoubtedly be of great importance since industrial consumers would be able to increase their plant operating efficiency without delay and thus effect considerable savings.

The wider range of speeds afforded by 60-cycle installations was, Mr. Keith believed, an important factor. Modern lighting, too, operated more satisfactorily at the higher frequency.

Net Cost of Change

In considering the gross cost of the proposed changeover—estimated in the Commission's interim report at approximately \$200,000,000, Mr. Keith asked his audience to remember that the provision of certain additional system facilities included in conversion expenditures would probably have to be undertaken whether the project was proceeded with or not. In other words, further extensions and improvements of Hydro in Ontario on the present basis of different frequencies could not be carried out for nothing but would cost money, too. It was to be remembered also that the 60-cycle equipment which the proposed changeover expenditures would provide would have a considerably longer life than that of the equipment which it would replace.

"It will be quite evident, therefore," summed up Mr. Keith, "that the gross total cost of \$200,000,000 can be reduced by some amount which reflects the increased value of the resultant 60-cycle system over the existing 25-cycle system."

The lower net figure obtained, the speaker submitted, would be a truer picture of the actual cost of conversion. With so many intangible factors involved, it was, he admitted, very difficult to arrive at a precise figure. He had, however, attempted, by a series of arithmetical calculations, to reach an approximate one. This was given as in the neighborhood of \$120,000,000.

With a challenging array of statistics, Mr. Keith then went on to show that at the present time the municipalities, on the average, were in about the best position they could ever expect to be in to contribute their cost of the expenses involved in the proposed changeover; and he concluded his advocacy of the project with a detailed review of the advantages that would accrue to every class of consumer.

The Case "Against"

At the outset of his presentation against the proposed conversion Mr. Buchanan said he wished to make it quite clear that he was in the position of a lawyer who had been briefed to defend a client. In the interests of discussion he would

do the best he could to bring out the points in favour of the position he had been asked to take.

Considering first the proposed changeover as it affected the plant and equipment of the Commission and the municipalities, the speaker claimed that, in the actual generation of power, there was no advantage of one frequency over another. Transmission and distribution at 25 cycles was, he submitted, better and more economical than at 60 cycles.

As far as the utilization of power was concerned, 25-cycle power was more suitable for the low speed motors of heavy industry. For lighting with lamps of 100 watts size or larger, 60-cycle power offered no advantages. For motors driving machines at speeds of between 1500 rpm. and 3600 rpm., 25-cycle power was not applicable; but when it came to speeds over 3600 revolutions per minute, gears or other speed increasing devices were necessary so that the advantage of 60-cycle power disappeared.

Hydro Standing Alone

"The advantages of inter-connection between the Hydro system and others beyond the boundaries of the province," said the speaker, "have been stressed by Mr. Keith as another argument for the changeover, but the magnitude and extent of the Hydro system and the number of generating plants at widely scat-

tered points tend to minimize the need for such interconnection."

Mr. Buchanan presented a picture of the \$200,000,000 which it was estimated would have to be spent on conversion invested at a rate of 3 percent and drawing a substantial interest of \$6,000,000 a year. That, he submitted, was real money. To save \$6,000,000 a year on equipment the consumers of the Niagara district would have to purchase annually \$30,000,000 worth of 60-cycle electrical appliances.

Conversion On Premises

The advantages to be gained through standardization at 60-cycles were, Mr. Buchanan suggested, mostly hypothetical or conjectural. As far as conversion was concerned, he maintained that any consumer (industrial) could convert on his own premises to any frequency he desired. In the case of the larger consumers this could be done at an increase in the annual power costs of 25 to 30 per cent, little greater than the average increase in cost for changing over the whole system. And no expense to the system would be incurred if consumers made their own frequency change.

It was suggested that the money required for the changeover would be spent in Ontario and would provide work for Ontario labour. Undoubtedly, it would; but, said Mr. Buchanan, the same

money taken from reserves and annual revenues was available for spending for many other more useful and productive purposes.

A Doleful Picture

In contrast to the picture painted by Mr. Keith, his protagonist drew a doleful sketch of only three or four of the larger municipalities in a financial position to undertake the proposed changeover without increasing rates. And even those three or four, he claimed, would only be able to contribute the funds required by exhausting all the reserves which had been so carefully accumulated for such necessary and desirable purposes as street lighting, underground distribution systems, etc.

From what consumers came the demand for the change? challenged Mr. Buchanan. The demand was probably mainly from consumers with expensive, highly specialized technical equipment which produced only a small revenue for Hydro. Those consumers, as he had suggested before, could easily finance their own frequency changers if they believed they could benefit from 60-cycles.

The whole question, concluded Mr. Buchanan, should be carefully and thoroughly considered—as Hydro always had considered important matters—in a vigorous, a purposeful and above all a forward-looking manner.



A "SHOT" taken at the joint afternoon convention session when Present and Future Plans of The Hydro-Electric Power Commission were given by W. Ross Strike, K.C., H.E.P.C. commissioner. Among those identified are: R. S. Reynolds, Chatham; R. H. Starr, New Liskeard; S. E. Thomson, Niagara Falls; A. B. Manson, Stratford; R. O. Quick, Brighton; J. K. Martin, Beachville; Hon. George H. Challies, M. J. McHenry, A. H. McBride, R. M. Thompson, D. F. Martin, A. H. Frampton and V. A. Beacock of the H.E.P.C.

CORRECTION OF BLIGHT IN RESIDENTIAL AREAS DISCUSSED BY SPEAKER

**Broad Requirements Of Community Planning Outlined
By Gordon Culham AT A.M.E.U. Conference**

"It is apparent that the management of utilities in general is continually engaged in the planning function, both in the old built-up sections where, as a change occurs, adjustments must be made for new loads, and in the outlying sections where extensions of services must be made without definite knowledge of the future volume of services required."

These observations were made by Gordon Culham, town planning consultant at Guelph, when addressing the A.M.E.U. delegates at the recent annual conference in Toronto.

He then went on to discuss the broad requirements of community planning, and pointed out that planning could play an important part in rehabilitation and new development only as its particular values and limitations became better understood. It was essentially a long-term programme, providing a broad framework for the short-term plan and had nothing whatever to do with the carrying out of the plans or the budgeting for them. Two fields of regulative planning were zoning and the control of subdivisions. Zoning, the speaker said, was partly concerned with the protection of an existing use from aggressive damaging uses, for example saving the home from commercial damage or excluding residences from open lands zoned for heavy industry. The other regulative branch of planning was concerned with preventing the scattering of high density subdivisions over large undeveloped areas beyond a reasonable range of services. The two major objectives here were compact development for economy of utilities and the insurance of minimum health standards.

An Accumulated Investment

Mr. Culham discussed in some detail the planning both in built-up areas and in undeveloped areas. He pointed out that it was important that the built-up area should not be allowed to deteriorate in order to protect the investment in utilities. The capital structure of the utilities represented the accumulated investment of years of taxes in permanent public improvements and the citizens should be able to enjoy the full realization from a profitable investment. He suggested various ways of correcting the blight in a residential section. One would be by the protection of the neighbourhood as an entity. Another was by improving

the amenities such as planning open spaces with trees and lawns. He emphasized here that Hydro could play an important part in the improvement of the appearance of residential sections by the use of ornamental standards, underground wiring and care in placing substations as well as in their design.

"We should come," he said, "to a more general realization that a line of cedar poles has no aesthetic quality."

Relief From Traffic Congestion

Another way to correct blight was by preventing migration by relief from traffic congestion. Streets were primarily channels of transportation and should be used as such.

In discussing planning in undeveloped areas, Mr. Culham said that the migration of industry into outlying parts was something quite new and had as its main reason low-cost land for both the plants and homes for the workers. One of the problems here was that of utility installation in these new marginal settlements. In planning a new community he said that there were three chief considerations to keep in mind. First, there was the selection of the site which had to be chosen for suitability, as determined by its accessibility, siding accommodation for industry, transportation, attractive environment for homes and recreation and protection from neighbouring nuisances. Second, was an economic system for services. The services should be integrated with other units of the whole planning area. The third consideration should be for a generally sound development. In the past it has been found that a suburb could not live by housing alone and a healthy, well-rounded development should have not only housing but business and industry to provide services and make a complete unit—with an economic balance of its own.

TODAY'S MILK

(Continued from page 6)

has done all the work. Now the bottles or cartons are packed in clean cases and are conveyed to the refrigerator room where they are stored until the milkman is ready to set out on his route.

Back in the dairy, the plant men are taking the machinery apart, flushing out

the lines and sterilizing every container that the milk has passed through so that there is no possibility of any bacteria breeding. Even the walls and floors of a dairy get a daily scrub down and clean uniforms are always worn by those working around the product.

Making Ice Cream

Most of us at some time or other have made ice cream at home. Either we put the custard into the freezing tray of our electric refrigerator or we hand-cranked the gallon freezer, making sure that we had a good solution of rock salt and ice packed around it.

Well, the commercial application of the same thing is carried out on such a large scale that it makes the home methods look insignificant. To start with, the vat in which the custard is mixed is bigger than your dining room table and there is an individual vat for each flavour being made. When the mix has been agitated and chilled to the consistency of a mush, it comes out of spouts in one or more flavours into individual cartons (bricks), or in either metal or waxed containers for fountain use.

When special novelty moulds are made up for festive occasions, they are filled by hand and it is a job that requires a fair amount of artistic ability. After the ice cream is put into its container, it is whisked into the freezer storage room where the temperature is a constant 50° below zero. There is no record of these quarters having been used as a lunch room by the employees.

Butter Churning

In the 1905 period we mentioned, an inventor came up with a device, advertised as an absolute necessity for every home, a combination milk churn and cradle rocker which was operated by pumping a treadle with one foot. Actually, it looked like a manual sewing machine.

Nowadays, it is just a matter of throwing a switch and watching the gauges. Then the butter is churned, and a huge pat is put on an electric machine that shapes, weighs and wraps it in pound prints.

As in the case of many other fields of human endeavour, Hydro is playing a pre-eminent rôle in the dairy industry. Electricity is used not only to operate milking machines and coolers on the farm, but, as the foregoing story indicates, it plays the lead part in the overall operation of a modern dairy which produces today's high quality milk and other associated products.



Hydro

HOME FORUM

by Edithemma Muir

HOME ECONOMIST

April is a flowery month—a month of colour and sunlight, sudden scurrying showers, glistening pavements, and a tender greenness creeping out of the brown earth.

* * *

April is also a month when appetites are sometimes a bit fickle. Maybe it's just old-fashioned "Spring fever." Anyway, after the long winter with the heavy "meat-and-potato" type of meals you may find yourself with a yen for change, variety and something new.

* * *

Dress up your meals a bit. Make them as good to look at as they are to eat, and don't be afraid to try out unusual food combinations. You'll find yourself taking a new interest in the preparation of Spring meals, and your family will be looking forward to your latest efforts. Here is a dinner menu planned to give you a "lift," both in appetite and nutrition. Try it today and let us know what you think of the Peach Gingerale dessert.

* * *

Asparagus rolled in bread and toasted

Cheese Souffle

Watercress and Olive Salad

Fresh Brown Rolls

Peach Gingerale Jelly

Peanut Brittle Cake

Tea

* * *

One seed company used clever sales methods this year when they printed a message on each order blank to the effect that substitutes should be listed. Even the tardy gardener ordered his seeds early and everyone I know got what he wanted.

* * *

Many homemakers are of the opinion that it is "little use" housecleaning until the furnace is out. In any case there are preparations to make before this task is undertaken.

1. Clean the equipment. Brooms, brushes and mops become greasy after

PEACH GINGERALE JELLY

2½ tbsps. gelatine
1 cup cold water
2 cups gingerale
3 tbsps. lemon juice
1 tsp. salt
½ cup maraschino cherries
½ cup malaga grapes
½ cup apples, diced
½ cup peaches, diced
Lettuce

Cream Dressing:

¼ cup mayonnaise
½ cup cream, whipped

Soak gelatine in ½ cup cold water for 5 mins. then dissolve gelatine in ¾ cup water which has been brought to boiling point. Add gingerale, lemon juice, and salt. Cut cherries and grapes in halves; seed grapes. Dice apples and peaches and add all fruits to gelatine mixture, when partially set. Pour into a ring mold and place in refrigerator until set—at least two hours.

Unmold on serving plate, garnish with lettuce or cubed pineapple and serve with cream dressing made by carefully blending whipped cream with mayonnaise. Serves 6-8. (An easy way to unmold gelatine salad is to remove from electric refrigerator and let stand for 5 mins. Invert on serving dish and place a towel wrung out in hot water over mold.)

being used on waxed floors. Wash in warm soapy water, then rinse in warm water to which a tablespoon of ammonia has been added.

2. Wash the small rag rugs and dip in a heavy solution of starch. By doing this, they will remain in a better position on the floor.

3. Put winter things away—for instance the hot water bottle, the electric heating pad, the woollen comforter, the flannel bathrobe and the motor car rug.

4. Clean and sort things in cupboards and drawers.

Some folks dread housecleaning, but actually there is often a built-up urge to make music in the home for months before spring cleaning. A poet typifies the scene in such lines:

Oh, the gay and rhythmic swishing
Of a quickly wielded broom
And the sliding of the chairs
When you're dusting up the room.

Oh, the snapping and the flapping
Of the clothes hung out to dry
And the tinkling of the dishes
As the truck goes lumbering by.

Say! you never fully realize
Till you've lived there many years
That a home is full of music
That is joyous to your ears.

* * *

How do you clean a coffee percolator? To sweeten and clean the electric coffee percolator put a teaspoon of baking soda in it, half-fill with water and let it boil for a few minutes. Then, rinse in several changes of warm water. For the teapot, dip a damp cloth in baking soda and rub inside thoroughly; then wash teapot.

* * *

What can I substitute for cream of tartar in a recipe? When making a cake that calls for cream of tartar, you may use one teaspoon of baking powder instead of one-half teaspoon of cream of tartar and one quarter teaspoon of baking soda . . . the baking soda will be listed also in the recipe.

* * *

Should window screens be varnished or painted? A protective coating of special varnish is recommended.

* * *

Why do light bulbs burn out in a short time? If your lamps burn out frequently ask your electrical dealer what voltage lamps you should use and check with the label on your lamps. Buy a long-life lamp. The Hydro Long-Life lamp is guaranteed to last 1,500 hours.

(Continued on page 31)

IN PLANNING SYSTEM HAVE EYE TO FUTURE MUNICIPALITIES TOLD

Problems Of Smaller Municipalities Discussed At A.M.E.U. Session

One thing that should be kept in mind when designing an electrical distribution system is that some day the town or village might develop into a flourishing city and, therefore, it was necessary to lay out the system in such a way that it could be expanded without a major rebuilding programme. This point was emphasized by Stan. Webster, secretary and superintendent of the Tillsonburg Public Utilities Commission, one of the speakers who took part in the panel discussion on Problems Of Smaller Municipalities at the recent Association of Municipal Electrical Utilities' conference in Toronto.

He said that the substation should be considered first as it was the source of power. If the station load were under 1500 kilowatts, it was advisable to have it located at a point as near to the centre of the load as possible, bearing in mind future location and size of load. It was a good idea to follow the old saying, he stated, of "don't put all your eggs in one basket." Several sources of supply made a system more flexible because, in case of trouble, important loads could be switched from one station to another.

The next consideration, continued Mr. Webster, was the location of the feeders from the substation. These were the main arteries of the distribution system and should, therefore, be placed in protected locations. The speaker went on to point out that trees did not necessarily assure a protected location. There were many kinds of trees, he said, which increased construction costs and presented a potential hazard to the line.

This left two alternatives, he stated; either to go underground or behind houses or stores. Underground construction, Mr. Webster pointed out, was expensive and was not flexible for increased load conditions. The other alternative involved placing the equipment either in a back alley or in a back yard on private property. By using the back alley, he continued, it was possible to feed two rows of houses from the one line, bringing the service into the house in close proximity to the kitchen where the heaviest load was used. He said that people were usually willing to have a pole placed on their property in order to eliminate the necessity for trimming the trees in front of the house. He cautioned that a written right-of-way agreement should be obtained from the prop-

erty owners before the construction work was started.

"In order to give good service, loop lines are the greatest asset that a distribution system can have," Mr. Webster said. "They not only give a possible dual feed, but the load can be balanced on each side by opening the loop at different locations."

Mr. Webster's paper also covered the joint use of poles; sectionalizing switches, bare primaries and secondaries.

REPORTS PRESENTED AT A.M.E.U. SESSION

Plans for a province-wide Red Seal campaign and the report of the new Electric Service League of Ontario were among the subjects of interest discussed at the recent convention of the Association of Municipal Electrical Utilities.

Various reports were given at the business session including those on accounting and office administration, rates, merchandising, employees' relations and accident prevention.

Following the president's address by R. J. Smith, the head of each committee submitted his report. R. S. King reporting for the accounting and office administration group, itemized the various meetings that had taken place during the year, notably the one held in London in October, 1946. The programme at that time included a sound film presented by the Remington Rand Ltd., an address by Commissioner W. Ross Strike, K.C., on "The Hydro Family" and a short address by H. V. Walters on "Budgeting."

R. S. Reynolds, reporting on the rates committee, said that the committee had had a very active year with several meetings held at different points throughout the province. He stated that, after several discussions, rate revisions were brought to the executive committee of the A.M.E.U. last September and approved by them for submission to The Hydro-Electric Power Commission of Ontario. Since this report was written the H.E.P.C. have approved the recommendations and these changes will be incorporated in a revised standard interpretation of rates.

The merchandising committee report was read by J. E. Teckoe, Jr. This committee reported a very active year with

business including co-operation with the Electric Service League of Ontario in planning a province-wide Red Seal educational programme for adequate wiring. The report stated that the individual Hydro municipalities would not make any direct financial contribution to the League but that the total contribution would be made by the H.E.P.C.

Another matter for discussion was the flat rate water heater, and the following resolution was passed by the committee: "That because of the established acceptance in Ontario of the Hydro method of water heating, it is desirable that this service be continued and that the merchandising committee favours the adoption of the unit type water heater presented by the research committee of the H.E.P.C., and recommends that the A.M.E.U. executive present this motion to the Commission and ask that they approve immediate negotiations with manufacturers to procure a complete water heater unit to meet the requirements of the municipalities." As a result of this motion, orders were placed with the manufacturers and units will soon be coming off the assembly line.

A sub-committee was set up to review and bring up-to-date the booklet "The Policy and General Rules for the Operation of a Hydro Shop." There was also a report on a meeting of the Canadian Electrical Council on proposed Consumer Credit Legislation.

The next report was given by J. W. Peart of the Employees' Relations Committee. He said that this committee had been formed in 1944 and that since that time it had carried on a continuous study concerning salary and wage schedules as well as working conditions of the staffs of municipal electrical utilities. A report was presented on the survey concerning salary and wage schedules that had been sent out to municipalities in 1944 and again last December. The survey showed a general tendency on the part of employers generally of granting flat increases to all classifications throughout the staff regardless of the variation in responsibility of duties. The committee felt that this method of increase might eventually disturb the whole foundation upon which rates of compensation had been established. Mr. Peart pointed out that this was a special and not a standing committee and asked that the association consider making it into a standing one.

M. W. Rogers gave the report on Accident prevention. The committee did not have a meeting during the year because of the difficulty in making hotel reservations. However, many ideas for discussion were brought forward including the use of live line tools and accident prevention results in rural operating areas.

CONFERENCE VOX POP

By W. Ronald Mathieson,
Hydro News

COME AUGUST 4 this year and **R. J. SMITH**, manager and secretary-treasurer, Public Utilities Commission for Perth, and immediate past president of the A.M.E.U., will celebrate 50 years in utility work. As well as being very active in electrical circles, Mr. Smith is reported to hold the longest membership record in the Canadian Waterworks Association, having joined back in 1911 when that organization was still in its infancy.

* * *

R. M. DURNFORD, President of the O.M.E.A. for the second successive year, is also President of the Sarnia branch of the Young Men's Christian Association. In chatting with him, Hydro News learned that the "Y" has had one of the best years and that his committees are working overtime to cope with all the new memberships following a special drive.

* * *

FROM **RAY PFAFF**, manager, St. Marys' Public Utilities Commission, comes word that the Community Centre, which the whole town supported, went over "with a bang" and the latest plans include new skating facilities so that there will be no lag in activities during the winter months.

* * *

"IT TOOK four engines of the largest type to pull our train out of the snow," stated **D. J. McLEOD**, secretary and commissioner of the Embro Hydro-Electric System, in relating his experiences in coming to the convention. He told how he and his companions impressed a railway official with the urgency of their business and were able to hitch-hike a lift in as far as Woodstock on a snowplough.

* * *

PRESIDENT OF the Ottawa Kennel Club for the last twenty years, commissioner **FRANK H. PLANT**, Ottawa Hydro-Electric Commission, is interested in plants of the horticultural variety. It is rumoured that the calla lilies he grows are about the finest in the Province. As for dogs, he raises cocker spaniels and wire haired terriers.

* * *

ANOTHER FLOWER fancier is **J. R. BEAULIEU**, chairman, Penetang Water and Light Commission, who grows gladioli and other flowers in his ample garden. Mr. Beaulieu is married and has one daughter Veva.

A RELATIVE of one of the men who was on the great tug-of-war team from Embro and went to the Chicago World's Fair in 1893 to win the title of "World's Champions," **WILLIAM McLEOD**, superintendent, Hespeler Hydro-Electric Commission, is vice-president of the local branch of the Kinsmen club. He is married and has three girls, Ruth, Margaret and Mary Anne.

* * *

THE STORY OF **GEORGE W. AUSTIN** would make a better book than a paragraph. He was born in Brantford and educated in Hamilton. On leaving school, he joined the staff of the Hamilton Spectator as a cub reporter and by the time he was 22 years old he was managing editor of that publication. From here he went to the Kingston Standard as feature writer and when he was 23, he was editor of the Portage La Prairie Review in Manitoba. By the time he was a year older he was back in Ontario, this time editing the Peterborough Review and then came to Toronto to be an editorial writer for the old Mail and Empire when he was just 24 years old. At this time he became interested in house wiring and so, in 1923, he founded the Electric Service League which is known today as The Electric Service League of Ontario and has as its manager, George W. Austin.

* * *

ROYAL QUICK, manager and secretary-treasurer, Brighton Public Utilities Commission, traces his ancestors back to 1625 when they arrived in this country from Holland. His great grandfather, says Mr. Quick, was the first man to build freight vessels to ply the waters of Lake Ontario. This family trait is still in evidence for Royal Quick himself makes his own boats and is very fond of sailing.

* * *

THE SECRETARY-TREASURER of the Beaverton Hydro-Electric Commission, **DOUGLAS I. ASLING**, who was born in London, England, is particularly fond of music and loves to sing. This goes double if a quartette can be arranged. As a hobby, he has a very fine gift for copper work and his home is graced with evidence of his work.

* * *

WHEN HYDRO NEWS caught up with **ALBERT JENNINGS**, he was dis-

playing a new cigarette lighter which had just been presented to him by the members of the staff of Hydro-Electric Commission of East York Township of which he is chairman. The best convention he said that he had ever attended was back in 1942 but, at the time of this interview, he remarked with a twinkle in his eye: "this one isn't over yet."

* * *

A REAL out-of-doors man, **HAROLD R. HENDERSON**, commissioner, Woodstock Public Utilities Commission, proclaims himself as vice-skip of their famous curling team. He spends all the time he can, when his public and business duties permit, in either golfing or hunting and, it is reported, that he is no greenhorn when it comes to fly-casting.

* * *

IF YOU EVER see a coloured photograph of an evening grosbeak, which is yellow, black and white, look at the caption on it as there is a mighty good chance that it was taken by **GEORGE E. FINDLAY**, Commissioner, Carleton Place Public Utilities Commission. Being an ardent camera man, he could be called the Karsh of the ornithological kingdom. Mr. Findlay has been on the commission for eighteen years and has held various positions on the O.M.E.A.

* * *

WE MAY BE wrong, but to the best of our knowledge, **LULU C. BEATTY**, who is the accountant for the Port Hope Hydro-Electric Commission, was the only lady to register with the A.M.E.U. during the convention. This is Miss Beatty's fifth convention and she assured Hydro News that she finds them very educational as well as entertaining. "The men have always been just grand to me," she stated when asked how she felt about working for two days in heavy sessions of various panels. Miss Beatty is treasurer of the Port Hope Business and Professional Women's Club and also plays the organ in one of the churches there.

* * *

ACCORDING TO **NORMAN A. BELFRY**, superintendent, Uxbridge Public Utilities Commission, one should check with the meteorological office before leaving home. After making his farewells, Mr. Belfry dashed to the station at 9 p.m. on Monday, March 3, got on the train and waited. It did not pull out for almost two hours and after 11.30 p.m. it got completely snowed in just outside of Goodwood. After an uncomfortable night in the coach, "Norm" and his snowbound friends ploughed on

(Continued on page 27)

#his and #hat

BY THE EDITOR

SUNNYSIDE BOARDWALK will be subjected to another severe test on April 6 when some thirteen hundred tons of feminine pulchritude and possibly seven hundred tons of magnificent males will be clicking and strutting from Dunn Avenue to the Palais Pier. The board-walk boards are likely to be doing plenty of groaning before the day is over and, perhaps, it won't be caused by weight alone! The office humourist tells us that after one of the "purr-ades," the sides of many of these boards were split from laughing. If that is true, advance information from our fashion scouts this year, would indicate that a new board-walk will have to be laid after April 6.

On the subject of fashions, we have an interesting piece of news we would like to pass along to our lady readers—the ladies who are slaves to fashion and who hasten to conform, without question, to all new decrees issued by the moguls of mode. This news may help bolster the morale and stiffen the backbone of these ladies who are reluctant about adopting the longer skirt which is reported to be the vogue this year. It was our privilege to meet a rather charming young lady the other day—a writer who gets around and who has just as much will power as she has wile power. When we asked her for her opinion on the new fashions and particularly on the longer skirt, the reaction to our question was amazing. First, this perfectly charming person used a most unladylike word commencing with "h" to crystallize her own opinion on the new decree. Then she turned and said: "You're talking to one little lady who has no intention of adopting the new skirt length. Don't get me wrong. I'm not what you might call a legs-ibitionist, although I'm not ashamed of my limbs, but I think I've got too much common sense to do such a silly thing. I'm on the move most of the time and I'm certainly not going to hamper my movements by getting into longer skirts."

"Won't it make you rather odd in a crowd?" we asked. Her eyes glinted and then she shot back: "This is a democracy, isn't it? All right, I reserve the right to make up my own mind about

what I do and what I wear as long as I don't interfere with anybody else or break the law. My dressmaker makes what I tell her to make. If I like a new fashion I adopt it, if I don't, then the dickens with it. Most of my sex, I'm sorry to say, are like sheep who are afraid to assert themselves and express their own individuality in the matter of dress. Sure, I'm different, and I'm happy, and men admire me for my independence."

We might add that our guess is that she is admired for much more than her independence. In fact, if she decides to drop in on the Easter Parade this year, she may steal the show.

DURING THE recent observance in the United States of the centennial of the birth of Thomas Alva Edison, one fact which apparently escaped the notice of radio commentators was the important link between Edison and Vienna, Ontario, where the original Edison homestead was located and where young Tom Edison spent his boyhood summers. The importance of this link is reflected in the fact that the old homestead was moved lock, stock and barrel, fourteen years ago by Henry Ford to his Greenfield Village in Dearborn, Michigan. Even the sway-backed shed, the old leaning outhouse, the gnarled lilac trees and top soil were moved to Dearborn. Recorded facts indicate that had it not been for the political inclinations of Thomas A. Edison's father, there is every possibility that the wizard of Menlo Park would have been born at the old homestead at Vienna, Ontario, instead of Milan, Ohio. Tom's father, it appears, leaned toward the Liberalism of William Lyon Mackenzie, grandfather of Canada's present Prime Minister, and following the rebellion of 1837, he (Tom's father) was one of Mackenzie's followers who had to flee Canada with a price on his head. In the Vienna district are to be found the graves of many Edisons, including that of Captain Samuel Edison who lived to 103. Authorities claim that there is more Edison history in and around Vienna than in Milan, Ohio; Port Huron, Michigan; or even Greenfield Village,

Dearborn. These are interesting facts which seem worthy of mention.

INCIDENTALLY, WHILE on the subject of centennials, two of our readers advise us that a recent United States broadcast on the centennial of Alexander Graham Bell conveyed the impression that the telephone was invented in the United States. If our readers are correct, then it would be well to keep the record straight and eliminate any doubt on this point.

It is true that on March 10, 1916, at Boston, Mass., a tablet bearing the following inscription was unveiled:

"Here the telephone was born, June 2, 1875."

However, here is an extract of a letter written by Alexander Graham Bell himself, to W. F. Cockshutt, of Brantford, on March 16, 1904:

"It so happens that the telephone was invented in Canada, at Tutela Heights, during my visit to my father and mother in 1874 but the first telephone was made in Boston in 1875, and all the early experiments were made there up to the time of the Centennial Exposition in Philadelphia. Thus the telephone was conceived in Brantford, reduced to practice (made practical) in Boston, and became known to the world at the Centennial Exposition in Philadelphia."

And, to further substantiate this historic fact, the Edinburgh-born inventor, when addressing the Brantford Board of Trade on March 9, 1906, said: "I can affirm to you gentlemen that the inception of the telephone was in Brantford."

G. M. B. LUMGAIR of the Commission's accounting department penned the following lines in tribute to the late J. H. Mackay:

His work shall live, who open eyed,
Found beauty, as on every side,
In life he sought it—

Framed in the mirror of his mind,
The sky, a rock, a pool, tree-lined,
So he portrayed it.

Beauty his mistress, so the gem
Glowed in his setting—diadem?
Well! he bequeathed it!

J. H. MACKAY PASSES

FROM LIFE'S PICTURE

By The Editor

A wife and son have lost a kindly, gracious husband and father; Hydro has lost a loyal, faithful and untiring servant; many have lost a good friend and patient counsellor and the world of photography has lost one of its pre-eminent figures in the passing of one of the finest and most charming of personalities from life's picture.

J. Harold Mackay died at 2.30 on the morning of March 18, aged 71. His remains rest at Forest Lawn Mausoleum.

In professional life, "Mac" (He was "Mac" to all his colleagues and friends) was a civil engineer, a capacity in which he served for 25 of his 27 years with the Commission. During these last two years with Hydro, however, the hobby in which he had attained the highest of honours and distinction—photography—became his full-time occupation as the Commission placed greater emphasis upon the need for the artistic type of camera studies which Mac produced.

Ranked With World's Greatest

While most Hydro people knew that he was far above average as a photographer, only a few outside photographic and art circles were aware that he ranked with the world's greatest as an amateur photographer.

Many interesting stories could be told about the honours which came his way not only from all parts of the North American continent but from practically all European capitals.

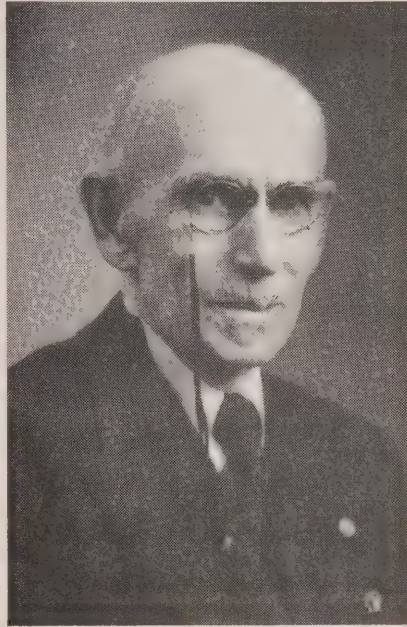
One illustration of the standard of his work is to be found in the result of one exhibition at Los Angeles where, of 1,000 prints on display, only three were chosen for the gallery's permanent collection, and Mac's "Pattern For Sumachs" was one. Another of his prints, "When Winter Comes," hangs in the National Gallery of Cuba.

Exhibited In 17 Countries

Within the past 20 years Mac had exhibited in 17 countries, and we recall that when we asked him the secret of his success he replied: "I try to beautify the ordinary things and glorify the beautiful things. I try to put part of myself into every picture so that people will see it with my eyes. And I don't make a picture unless I like it."

Readers of Hydro News have had an opportunity of seeing many of his fine pictures in the form of front covers and on Page Two.

It was our privilege to have been closely associated with Mac in the planning of many photographs and over a period of time we learned a little about his background. He was born in Markham, Ont-



J. H. MACKAY

ario, was with the Bell Telephone Company for five years as an inspector; was with the Stark Telephone, Light and Power System for three years as a draughtsman and designer and in 1912 he joined the Toronto Niagara Power Company. When that company was taken over by Hydro in 1920, Mac entered the Commission's transmission department as a civil engineer.

Many Memorable Experiences

There are many memorable and happy experiences we associate with Mac. There is one, however, which we feel might be mentioned because it is singularly appropriate in closing this rather inadequate but sincere tribute. It happened about two years ago in the North Country. Mac stood with us on the shore of a Northern lake as we waited patiently to photograph the setting sun which was gradually moving into a bank of golden, fleecy clouds and down behind a high treed ridge. Then came the right moment, the shafts of sunlight played upon the dancing waters and the clouds were diffused with gold. The shutter of Mac's camera clicked and he smiled.

That very beautiful sunset came vividly to mind as we paid our last respects to a true gentleman and a great artist.

CONFERENCE VOX POP

(Continued from page 25)

foot to a farmhouse where they were given a handout of porridge and warm biscuits. Around 10 o'clock Tuesday morning, two engines broke through the drifts and dragged their train back into Goodwood. Here at the general store, the crew as well as the passengers bought up all the cheese, fancy biscuits and fruit they could and returned to the train for their banquet. This food lasted for about eight hours when it was time to go to sleep again. This time Mr. Belfry tried the smoker and found more room to stretch but a little more draft than usual. It was not until 3 a.m. Wednesday that he discovered the window was open. Morning again dawned and with it a train from Toronto complete with a snow plough and three engines. Distance 41 miles . . . time 59 hours. "Norm" claimed that the few hours he had at the convention was well worth the discomfort of his adventure.

* * *

J. K. MARTIN, chairman, Beachville Hydro-Electric System, is one of the true blacksmiths who learned his trade as an apprentice and still shoes horses. When he permitted us to feel his sinewy arms, we decided that there is much wisdom in the saying: "Discretion is the better part of valour."

* * *

WHEN A SKI enthusiast can stop and rest on a crossarm of a telephone pole, the snow is quite deep. Verification of this incident came from mayor W. A. BLACKBURN, chairman H. G. McCANDLISH, and J. F. LINN, secretary and commissioner, Stayner Hydro-Electric Commission. They missed the first day of the convention altogether, having been snowed in but arrived at the hotel at 10 o'clock Tuesday night as the first day's proceedings were drawing to a close. Among the snow stories from their "neck of the woods" was one about a funeral that was postponed and another concerning a young lady who lived in a small town between Stayner and Collingwood. It appears that the time was approaching for a happy event which demanded the lady's presence at the Collingwood Hospital. With the appointed hour drawing near and the snowdrifts piling higher and higher, she was becoming increasingly apprehensive. An effort was made to get her to her destination on a sleigh drawn by horses, but four miles out of Stayner, the team could not buck the drifts any longer. As a result, the lady, with the aid of two men, was compelled to travel the four miles on foot—a harrowing experience at any time, but particularly so under the circumstances in this instance.

Lighter Lines



"I told him I'd like nothing better than a diamond, and that's what he got me—nothing!"

Mark Twain once said: "When I was a boy of 14, my father was so ignorant I could hardly stand to have the old man around. But when I got to be 21, I was astonished at how much he had managed to learn in seven years."

New stenographer: How do you spell "graphic"—with one "p" or two?

Boss: Well, if you're going to use any, you might as well go the limit.

Doctor: Your cough is much better this morning.

Patient: It ought to be, I was practising all night.



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3-10

"Oh, I've been too extravagant lately—and John put his foot down!"

For most of us, life is what we make it, but for the pedestrian it's *if* he makes it.

"What did one moth say to the other?"
"Gee, it's good to get back in civilian clothes again!"

The worst thing about a fanatical reformer is that he makes the world think that all reformers are fanatics.

A teacher of American history asked if anyone in her class could answer the question: "What was the reason for the Puritans coming to this country?" The best answer read: "They came to worship in their own way and to make the other people do the same."

According to Ambrose Bierce an auctioneer is a man who proclaims with a hammer that he has picked a pocket with his tongue!

Winter lingered so long in the lap of spring that it occasioned a great deal of talk. Bill Nye.

"What has your boy learned at school so far this term?"

"That he'll have to be vaccinated, that his eyes aren't really mates, that his teeth need replacing and that his method of breathing is entirely obsolete."

When a man wants to murder a tiger he calls it sport; when a tiger wants to murder him he calls it ferocity. G. B. Shaw.

Sidney Smith, describing an acquaintance, said that "he had all the stiffness without the occasional warmth of a poker."

A young man was introducing a friend to his deaf grandmother.

"This is Mr. Sneckboddie," he said.

"Eh?" said Granny.

"This is Mr. Sneckboddie," he said in a louder voice.

"I can't hear. Speak up."

He cupped his hands and shouted: "THIS IS MR. SNECKBODDIE."

Granny shook her head. "It's no use. It sounds exactly as if you were saying Sneckboddie to me."



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3-11

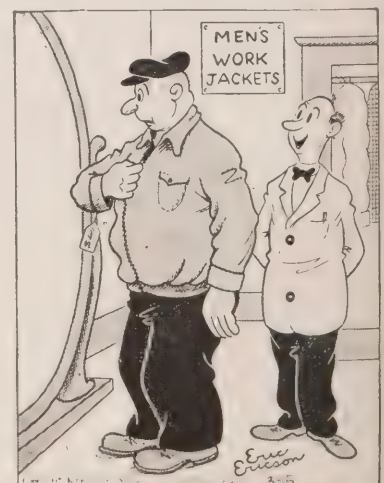
"Your sister may turn out to be an old maid. How would you like to have THAT on your conscience?"

"An examination," said one university professor, "is a presumptuous attempt to fathom the depths of human ignorance."

He: There's a long tunnel ahead. Are you afraid?

She: Not if you take that cigar out of your mouth.

What did the firefly say after he had backed into a lawnmower? "I am delighted!"



"It's water and beer repellent!"

SAYS SAFETY PRACTICES IN UTILITY INDUSTRY HAVE SPLENDID RESULTS

**Erle S. Miner Notes Reduction
in Accident Frequency Rates
— Addresses A. M. E. U.
Conference**

Careful attention paid to safety practices in the public utility industry has produced splendid results as evidenced by the reduction in accident frequency rates over a period of years.

This point was emphasized by Erle S. Miner of the American Telephone and Telegraph Company when addressing the A.M.E.U. delegates at the recent convention in Toronto.

First, the speaker mentioned the selection and assignment of employees and said procedures should be established to make sure that employees were physically and mentally fit to perform satisfactorily the work to which they were to be assigned. Second, was craft and

supervisory training.

"It is our obligation," said Mr. Miner, "to train each employee so that he will know how to perform each task safely and efficiently."

He said that one of the most effective means of insuring good training was by giving the supervisor the responsibility of developing the men under his direction.

The next point concerned construction and operating practices. The purpose of operating practices was to standardize safe and efficient working methods as well as to specify how a plant should be constructed and maintained so that it would be economical, efficient and safe. Standard practices that were developed after careful study and field experience should be revised and added to as conditions changed. Another important activity was first aid training.

"Experience has shown", said Mr. Miner, "that companies that have been

near the top for a long period have been continually active in their first aid training work."

The fifth point was described as the safety observation plan whereby foremen and supervisors were asked to make a note of each significant unsafe practice observed in their own departments. Then these observations are summarized and made available to all supervisors who could tell where best to focus attention in eliminating unsafe practices. Next point concerned the plant itself, that is, a plant designed, constructed and maintained to minimize accidents and to supply protective devices. Last point to be emphasized was the acceptance of responsibility on the part of supervisors for their men.

In addition to these major pointers, Mr. Miner explained that there were many safety "tools" as well, such as motion pictures, film strips, safety bulletins, posters, safety award plans and so on.

"Experience has shown" he continued, "that sporadic safety campaigns are only temporarily effective and that a safety programme is a fundamental requirement."

"To accomplish this task," he said, "is a challenge to the ingenuity and ability of each one of us."

LINDSAY HYDRO-ELECTRIC SYSTEM BANQUET

ALL THE linemen with the exception of W. M. "Mike" Hogan were at the banquet and, as a matter of record, they had their picture taken. Included in the group are: Donald MacFarquhar, Charles Growden, Nori. Pogue, Thomas Cochran, Earl Grimmons, John Martin, Harold Willis, Greg Eagen and John Lightbody, the manager. C. V. Sleep, chairman of the system, announced that a new substation would be erected and that tenders were already in the hands of the various suppliers.



MARSH MEMORIAL Hall was the scene of a gay evening on the occasion of the second annual banquet of the Lindsay Hydro-Electric System with C. V. Sleep, chairman, acting as master of ceremonies. Recalling some of her experiences of many years ago, Miss M. C. Edgar, who retired from the Commission in 1940, stated that before Hydro was introduced, electricity was generated from steam boilers and the late manager, Walter Reesor, used to sit up nights stoking fires in order to keep the municipal lights on.

SAYS ETERNAL VIGILANCE PRICE OF GOOD SERVICE

A. E. Fort Of Simcoe Addresses A.M.E.U. Conference On Maintenance of Distribution System

That eternal vigilance is the price of good service was the keynote of A. E. Fort's paper on Maintenance Of Distribution Systems in the panel discussion of Problems Of The Smaller Municipalities at the recent annual conference of the Association of Municipal Electrical Utilities in Toronto.

Mr. Fort, who is associated with the Simcoe Public Utilities Commission, said that every season brought its own kind of trouble; in summer there were severe electrical storms; in winter they had to contend with ice, sleet and blizzards, and in spring and fall there were lashing rains and gales.

In discussing the Maintenance of Distribution Systems, he pointed out that the aim and goal of a superintendent of a town or village electrical system should be continuity of adequate service. Continuous service somewhere around 90 volts was not much use, he said, and neither was 115 volt service when it was continually interrupted.

The prerequisite, he said, for the desired result was, of course, an efficient and well trained staff. "With the present urgency of the work which has to be done," the speaker continued, "and the necessity of having good linemen, I feel that the linemen's school is the best bet. The trainee will get more general information in the three months he spends with the school following a regular training syllabus under competent instructors than he can pick up on a small system in a year where he is subjected to all kinds of work for various departments of the town utilities that detract from his regular training."

"Another thing that is important," Mr. Fort stated, "is to have proper and sufficient equipment with which to work. On my own system, all tools, climbing equipment, rubber boots and coats are supplied and I feel that this is a good feature. You are thus assured of not having to operate with a haywire and binder twine outfit which is often the case when the men supply their own equipment."

Meter records, he said, were much to the fore now and errors due to incorrect multipliers were pretty much a thing of the past. Too much stress, he continued, could not be placed on meter records and meter maintenance. You must

have the finest operating system in the Province, continued the speaker, but if the little disks are not revolving and the dials recording, you would not be able to carry on very long because you would not have any money with which to operate.

The matter of public relations, he pointed out, was also very much to the fore in smaller towns where the superintendent was known to a large number of consumers by his first name, and whose 'phone number was also known and used quite frequently, particularly if the "juice" went off during a ball game or hockey match.

Complaints in the smaller towns, Mr. Fort stated, took on a more personal aspect and, consequently, demanded more personal attention than those in a larger system. The staff and gang, he said, had to be kept "right on the bit" and made to remember that while the customer might not always be right, at least the revenue from them kept the pay cheques from being returned N.S.F.

WATER HEATER, RADIO, SUPERVISORY CONTROLS DISCUSSED BY A.M.E.U.

Use of supervisory control systems for the control and supervision of outlying stations is constantly increasing, according to F. F. Ambuhl of the Toronto Hydro-Electric System.

Mr. Ambuhl was one of the speakers on a panel discussion on "Problems of Large Municipalities" conducted under the direction of D. E. Charters of Windsor at the recent A.M.E.U. conference in Toronto.

One advantage claimed for supervisory control was that it made possible more efficient operation by preventing delays and errors associated with manual operation, according to Mr. Ambuhl. Another advantage, he said, was that the economy made possible by removing the need for local operators, paid for the equipment in several years. Standard supervisory control schemes today differed from the ordinary remote control schemes in that they performed many operations over a few small wires. Also they operated over greater distances than would be practical or economical for ordinary remote control schemes.

The history of commercial type supervisory control, continued Mr. Ambuhl,

dated from about 1921, the first installation having been made on the Cleveland Railways Company in that year. The speaker continued to trace the development of this type of control and to discuss its operation in some detail. "There are so many types on the market now," he said, "that operating companies should have very little trouble selecting a system suitable for their requirements."

Radio Communication

A. W. Bromley of Kitchener P.U.C., who gave a paper on "Radio Control," said: "About two years ago the Public Utilities Commission of Kitchener which operates the gas, electric and transportation systems, decided that the business and the city were large enough to justify the installation of radio equipment for communication between some of the trucks and the main sub-station where operators are on duty 24 hours a day."

In the electrical department it was felt that there would be an increase in revenue resulting from the more rapid return of a consumer to the line after a line failure, a saving of man hours and car miles and a general improvement in service to consumers. The same view was held in the gas department while the transportation department felt that radio would help maintain schedules and speed up repairs to vehicles.

Different types of transmission equipment were investigated and it was finally decided that the frequency modulation type was most suitable. They then obtained a license and were assigned a frequency. Orders were placed for one 60-watt station type transmitter and five 30-watt mobile stations. Three of the mobile stations were installed in electric vehicles, one in a gas vehicle and one in the transportation superintendent's car. The installation and the operating results had been equally satisfactory. Last fall a miniature whirlwind and thunderstorm swept through the city and disrupted service in about thirty places at the same time. Inside three hours with the help of the radio equipment all service had been restored; without radio it would have taken about twenty-four hours. This and other instances had convinced the commission of the practical value of the investment and already two more mobile units had been added. Mr. Bromley recalled that when the radio was first installed, on a couple of occasions consumers called for service when service trucks happened to be near their premises and they hung up their phone to answer the door to service men. It was a coincidence but it made quite an impression on Kitchener consumers!

"Water Heater Control" was the subject of the paper presented by A. L. Furanna of London P.U.C., who gave a

(Continued on page 32)

G. T. COLEMAN PASSES

GEORGE T. COLEMAN, mayor and Hydro commissioner of Carleton Place, and retired general superintendent of transportation for the Canadian Pacific Railway, died on March 22. He was in his 72nd year. Members of his immediate surviving family are his widow, the former Jean Scott Wood of Kin-cardine; two sons, H. Travers Coleman of New York City and Keith C. Coleman of Beauharnois, Quebec; two daughters, Mrs. J. M. Fraser and Miss Josephine Isabel.

HYDRO HOME FORUM

(Continued from page 23)

Don't experiment with your sugar ration. Use tested recipes: Sweeten pudding sauces with left-over canned fruit syrups. Make cakes without frostings. Serve more hot desserts . . . they seem sweeter than cold ones. Try reducing the sugar by 2 tablespoons when making your prewar baked desserts . . . they will taste just as good. Try an extra pinch of salt in cooking . . . it brings out the sweet flavor.

Cultivate a taste for less sweet foods . . . if necessary, use more starch foods



which, like sugar, are energy producers. If sugar is used in hot beverages, it should be stirred until completely dissolved.

TO TRY and throw a little light on the kind of lighting which may brighten the lives of Canadians in the year 1950, an artist listened to a lighting engineer and came up with the above sketch of a subway station. His portrayal indicates the possibility of long, continuous lines of fluorescent lighting with slim tubes enclosed in diffusing glass which will provide virtually glare-free illumination throughout the station, eliminating dark spots that currently cause many accidents. Manufacturers of the subway cars are reported to be planning on the installation of cold cathode 72-inch fluorescent tubes in a warm white colour, placed end to end along each side of the car.



HYDRO SENIOR CLERKS TAKE J.I.T. COURSE



THESE SENIOR clerks representing the various Hydro rural offices in Essex, Kent and Lambton Counties, met in Chatham several months ago for Job Instruction Training Classes which were sponsored by the Commission in co-operation with the departments of labour and education of the Provincial Government. Included in the group are: Edna Booth, Sarnia; Madeline Simpson, Merlin; Ruth Stevenson, Blenheim; Isabel Miller, Oil Springs; Anne Early, Ridgetown; Greta Palmer, Bothwell; Clara Brown, Wallaceburg; Grace Watson, Windsor; Betty Graham, Harrow; Dona J. Murray, Chatham, and Irene Clark, Forest.

FOILED ATTEMPTING ROB TECUMSEH P.U.C.

Although foiled in an attempt to rob the Tecumseh Public Utilities Commission safe, safecrackers got away with \$1,000 from the Tecumseh Post Office recently.

On investigating a telephone call that thugs were trying to open the safe in the utilities office, Police Chief Jerry Desjardins interrupted the attempted safebreakers while they were at work around 4 o'clock in the morning. He gave chase and fired several shots after them as they fled down the railway tracks in the direction of Windsor.

ETERNAL VIGILANCE

(Continued from page 30)

detailed account of the installation and results of the water heater control in the city of London and stated that generally, the control had been quite satisfactory both from the standpoint of the commission and the consumer. Back in 1938, he said, it was recognized that the station transformer and feeder cable loads were rapidly approaching their rated capacity. The solution chosen was to reduce the peak load by water heater control. The carrier current equipment was selected for several reasons, one being that the controllers could be installed without inconvenience to the customer. The installations were made in one substation at a time. Today, London has approximately 2100 K.W. of water heaters under control. The installed cost of these had increased since the original installation in 1938 from \$18.00 per heater to the present day figure of \$23.00. This included the installed cost of both the station equipment and the controllers. The general advantages to the system, Mr. Furanna stated, had been improvement in regulation, less transformer and fuse failures, saving of higher capital expenditure for transformers, wire, etc., and a saving in power costs.

HYDRO ON THRESHOLD

(Continued from page 7)

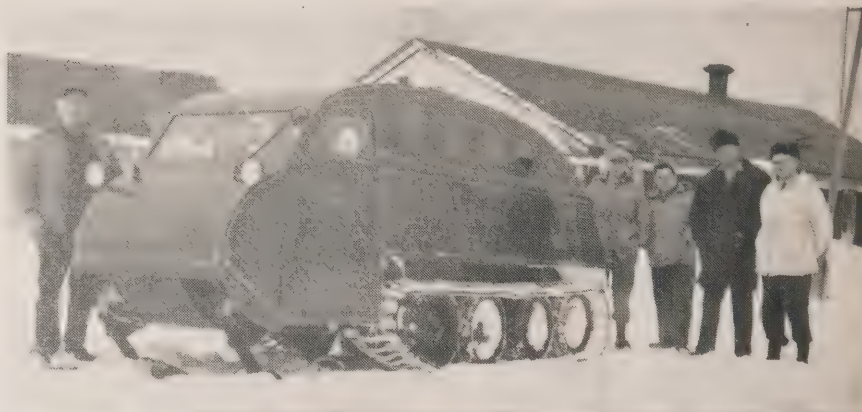
Southern Ontario, Mr. Strike said that the Commission, in the preparation of its final report, was now materially assisted by several factors. There had been a frank discussion of the interim report by the municipalities. The Commission in its deliberations would have the assistance of strong committees set up by the A.M.E.U. and the Canadian Manufacturers Association, while, in studying the many technical, administrative and financial details, it would be aided by experienced outside counsel and advice.

"It would appear to me," said Mr. Strike, "that a report prepared under the guidance and knowledge of such groups working in cooperation with the Commission's staff should cover the ground thoroughly and come forward with well-founded conclusions and recommendations."

In building and planning for the future of Hydro, the Commissioner felt sure, that no one would be content with a makeshift or outdated plant or system. Everyone associated with Hydro would be interested in striving and planning for the very best—counting the cost, but not shrinking from paying the price.

"We hold a justifiably high place in the electric field," Mr. Strike concluded. "We will never lose it."

USE SNOWMOBILE WHEN GOING GETS TOUGH



DURING THE winter when the going gets tough because of snow, Hydro employees use the snowmobile, shown above, to maintain contact between the plants at Lower Sturgeon, Sandy Falls, Wawa and Timmins. In this group, from left to right, are: Fred Wright, the driver, who operates the boat in the summer months; Stu Bull, chief load supervisor at Timmins; A. Gregg, electrician; John Savoy, mechanical engineer; and Perry Lockhart, chief operator at Wawa.

MORE ELECTRICITY

(Continued from page 9)

Electric Power Commission, the foundation could be laid for an organization of the utmost efficiency in every detail which would make it possible for the Commission to co-operate more effectively than ever before with all the municipal organizations throughout the whole of Ontario. That was the thought, he said, underlying such action as they had taken and it would be the guiding purpose behind whatever steps might be taken in the future.

"May I repeat what I said before," declared Premier Drew, "there is no thought of departing from any established principle underlying this great co-operative development which embraces all those who are responsible for the production, transmission and distribution of electric energy to our people. We have no thought of encroaching upon the established authority of any other public body. We do intend to accept our full responsibility, however, in our own clearly defined field. Our purpose is to assure adequate power for Ontario's present needs and the vast opportunities for expansion which lie ahead in our rural and urban areas at the lowest possible cost.

"The Government, the Commission, and every municipal body must work together as a great team," said the Premier, in concluding. "Let us all work together at this tremendous task. This is a challenge thrown to every one of us who has faith and a clear vision of our great future."

ADDITIONAL DATA

(Continued from page 10)

zation. The resolution passed at a recent meeting of O.M.E.A. District No. 6 "That we recommend to the H.E.P.C. that all Hydro municipalities discontinue the meter rental charge" was rejected.

It was the unanimous opinion of the delegates that the long services of Dr. Thomas H. Hogg, retiring chairman of The Hydro-Electric Power Commission of Ontario, should be recognized by a suitable testimonial. Arrangements for a presentation to Dr. Hogg at a convenient time in the near future were left in the hands of a special committee.

Also carried unanimously was a resolution expressing appreciation for the help and co-operation of Hydro News in its general coverage of the Hydro municipalities as well as of the O.M.E.A. meetings and conventions.

RECORD SURPASSED

With a registration of 1,048 delegates, this year's attendance at the joint annual conference of the Ontario Municipal Electric Association and the Association of Municipal Electrical Utilities surpassed last year's record of 1,025. In view of the difficulties so many of the delegates experienced in reaching Toronto by road or rail because of snow storms this was regarded as particularly gratifying. When H. R. Henderson of Woodstock, chairman of the Registration and Reception Committee, announced the final figures, there was a burst of applause, and R. M. Durnford, president of the O.M.E.A., remarked that they were convincing evidence of the keen interest which is being shown by all the municipalities in the problems faced by Hydro at the present time.

HYDRO AT WORK

Escalators . . . The Step Saver



Ostrich plumes and long skirts were all the rage in 1900 when the Paris Exposition opened and which featured among other things a new electrical device for climbing stairs, the escalator. The same machine which was shown in Paris was bought by an American store and is still in service.

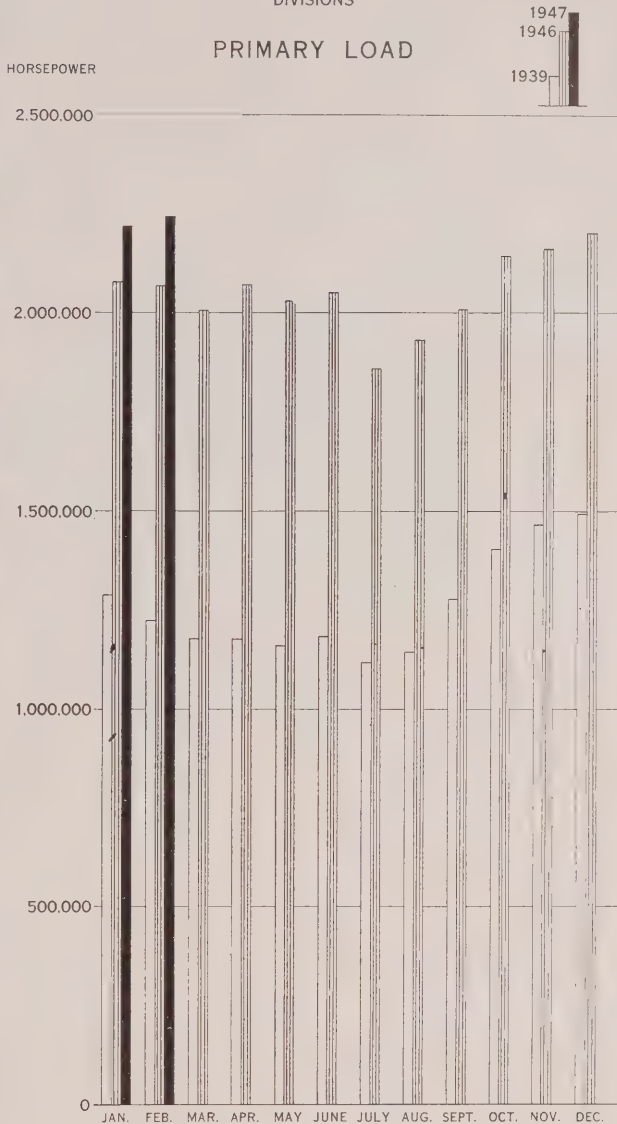
However, escalators have gone a long way since they were first invented. Instead of the cleat type of step there are now flat, individual steps similar to ordinary stairs. The motor which drives an escalator is always located at the top of the machine as it is a pulling operation. It may be any size between 15 and 30 horsepower, depending on the amount of traffic the moving stairs can accommodate. Escalators are built on an angle of 30° and move at a constant speed of 90 feet per minute. One that has steps 2 feet wide can accommodate 4,000 people in an hour while its big brother, the four-foot job, looks after 8,000 passengers in the same length of time.

These machines are generally placed near store or building entrances as there is a psychological draw to move people to other floors and not to cause congestion in any one locale.

The word "escalator" while derived from the Latin "scala"—to climb, is more or less a coined word.

SOUTHERN ONTARIO SYSTEM

EMBRACING NIAGARA, GEORGIAN BAY AND EASTERN ONTARIO DIVISIONS



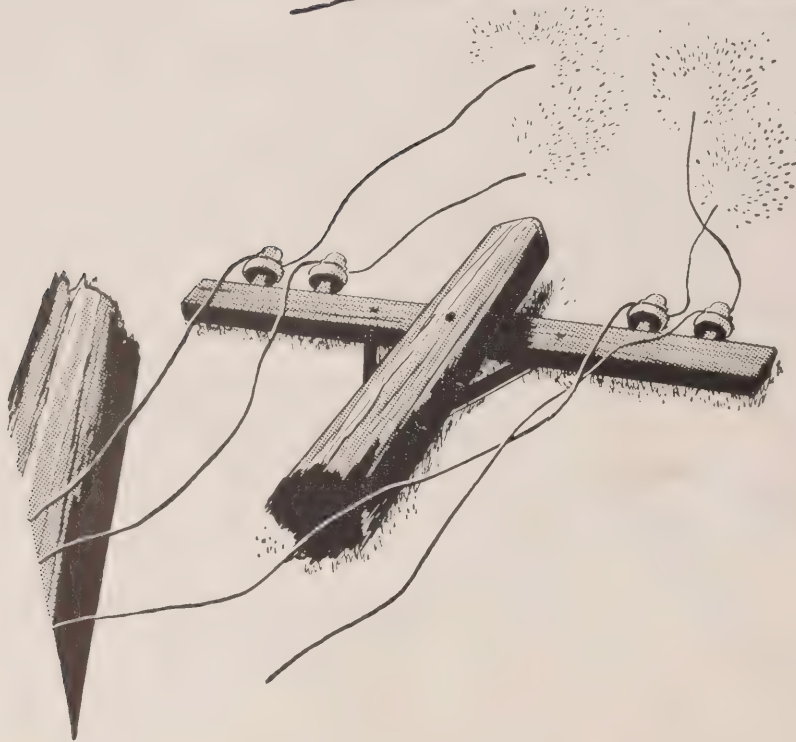
PRIMARY LOADS

AREA SERVED BY	MAXIMUM 20-MINUTE PEAK H.P.		PER CENT INCREASE
	FEBRUARY, 1947	FEBRUARY, 1946	
SOUTHERN ONTARIO SYSTEM . . .	2,243,432	2,069,542	+ 8.4
THUNDER BAY SYSTEM	134,853	132,172	+ 2.0
NORTHERN ONTARIO PROPERTIES	241,966	198,541	+ 21.9
TOTAL	2,620,251	2,400,255	+ 9.2

PRIMARY AND SECONDARY LOADS

SOUTHERN ONTARIO SYSTEM . . .	2,243,432	2,142,899	+ 4.7
THUNDER BAY SYSTEM	148,794	141,153	+ 5.4
NORTHERN ONTARIO PROPERTIES	297,207	286,496	+ 3.7
TOTAL	2,689,433	2,570,548	+ 4.6

The only safe way . . .



Never touch a fallen Wire!

Wind, snow and sleet break down electric wires sometimes in spite of every precaution. Shock or severe burns can result from touching such a wire. Never touch a fallen wire.

Warn children not to go near fallen wires . . . but do not risk a demonstration by trying to move one out of the way. It can be fatal!

Remember these three things if you discover an electric wire on the ground or dangerously low:

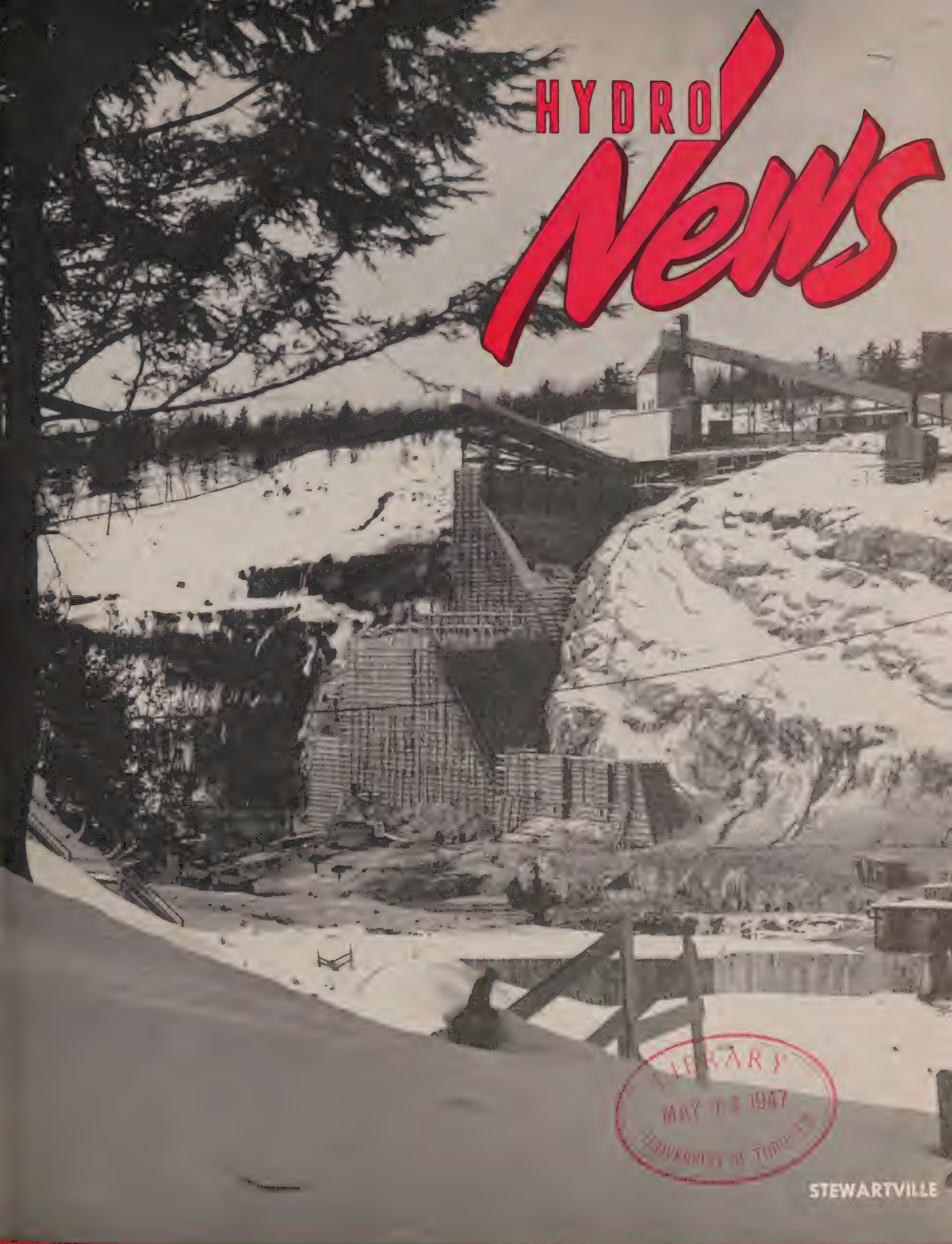
1. Do not touch the wire under any circumstances;
2. Stay on guard and keep everyone away until Hydro men arrive.
3. Have your nearest Hydro office notified at once.

Everything possible is done to keep Hydro wires safe in your community. Some things . . . winter storms and human folly . . . are beyond control. When these things occur, Hydro asks your co-operation in being careful and in warning others. By doing so you may save a life.



THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

HYDRO *News*



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STEWARTVILLE



AN ODD MANIA, BUT...

Breaking windows is an odd and expensive mania that most sane people manage to control. Breaking insulators on Hydro poles, or shattering street lights, is an even more costly pastime that an astonishing number of boys and men fail to curb.

An insulator or street light sits up so invitingly . . . and, to the uninformed seems such a small and insignificant piece of equipment that it presents a tempting target. Few people would break insulators or street lights if they understood the damage that can result.

A broken insulator can cause a short circuit and cut the service on a line. The homes, the factory, the hospital or the stores depending on that line are cut off from power until the insulator can be replaced. Housewives are inconvenienced. Factories can be stopped with possible pay losses to the workers. Human lives can be endangered, especially in a hospital.

Broken street lights imperil both foot and vehicle traffic, and create an invitation to crime.

To repair damaged insulators and replace broken street lights requires men, trucks and possibly miles of travel. It all adds up to a big price for a target . . . and Hydro consumers pay that price.

Please use your influence at every opportunity to prevent the deliberate or careless destruction of public property.



DON'T BREAK
STREET LAMPS



DON'T DAMAGE
INSULATORS

THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO



THE HYDRO - ELECTRIC POWER COMMISSION OF ONTARIO

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THE FRONT COVER



THIS arresting cover pic-
ture by J. B. Horrell
of the Commission staff was
taken recently at the new
H.E.P.C. development now
under construction at Stew-
artville on the Madawaska
river and shows the founda-
tion for the power plant and
crib work which will extend
across the valley and form
the dam.

CONTENTS

	Page
Waste Water Channel At Abitibi Canyon - - -	2
Page Three - - - - -	3
Electricity In Medicine (Chapter II) - - -	4
Commission Organization Is Streamlined - -	7
Brantford - - - - -	11
Biggest Construction Programme Now In Progress	15
Pupils Show Marked Enterprise - - - - -	20
Tremendous Programme Facing Commission -	22
Around The Hydro Circuit - - - - -	24-25
Get Back Into Normal Swim Following Floods -	26
Poison Ivy - - - - -	28
Adequate Wiring Schools - - - - -	29
This And That - - - - -	30
Hydro Home Forum - - - - -	31
Hydro At Work - - - - -	33
Monthly Load Summary - - - - -	33





PHOTOGRAPHED BY the late J. H. Mackay, formerly of the Commission staff, this reproduction shows the waste water channel at Abitibi Canyon, looking upstream to the power plant.

A NEW AND GREATER ERA

CHANGE is usually synonymous with progress in any undertaking, large or small. Tasks which were once accomplished by long, tedious manual operation are now completed in a fraction of the time through the magic of electricity and mechanization. Methods of organization, too, have to undergo change and streamlining to keep pace with new problems and the accelerated tempo of modern business.

This same principle, as it affects engineering and administrative organization, is true in the case of The Hydro-Electric Power Commission of Ontario which stands on the threshold of the greatest period of expansion in its history. The outstanding contribution of those who directed the affairs of Hydro during its first four decades of service to the people of Ontario are reflected in the fact that today Hydro ranks second in magnitude, in the matter of capital investment, only to the two Canadian Railways, which are Dominion wide in their operation. In that brief span of forty years, it has attained world-wide pre-eminence as a public ownership enterprise and in Ontario its role is vitally interwoven with the lives and welfare of the people and with the general economic progress of the province.

In the past decade alone the Hydro load has doubled and its capital investment all but doubled, creating still more onerous responsibilities and problems of greater magnitude, necessitating the creation of engineering and administrative structures upon which Hydro can expand and build for the future. A close study of existing and future problems has shown that the tremendous programme ahead calls for more than the highest order of engineering and administrative direction, which Hydro has always enjoyed; it demands a more closely integrated type of organization and a reallocation of clearly defined duties in order to facilitate the overall operation of the Commission in meeting the urgency and complexity of present-day problems.

With these facts in mind, the Commission is now streamlining its organization and the duties of individuals and thus setting a pattern for the future growth of Hydro just as its pioneers set a pattern which was in keeping with the conditions of that time.

In taking over the duties of general manager and chief engineer, R. L. Hearn will be responsible for the administrative direction of the Commission's operations and staff. Recognized as one of the top ranking engineers on this continent, Mr. Hearn will have the able co-operation of Dr. Otto Holden and A. W. Manby who have been named assistant general managers of engineering and administration respectively. Dr. Holden who, like Mr. Hearn, has attained an international reputation in the field of engineering,

has been associated with the Commission for 34 years, while Mr. Manby, who was assistant to the chief engineer-operations, has been with Hydro for 26 years.

This issue of Hydro News features a story which directs attention to these and other key appointments as Hydro gears its organization to accelerate the execution of plans for a new and still greater era of service to the people of Ontario.

MERRY MONTH OF MAY

IF you had lived a few hundred years ago in Merrie England and the first of May had come around, you would have shouted a friendly greeting to your friends and neighbours, "I wish you a Merry May" in the same way that we wish each other a Merry Christmas. For the first of May was one of the most popular holidays of the year. We have the Puritans to thank for the fact that there is scarcely any tradition of it at all on this continent. A few bold New Englanders did get out of hand and in 1628 tried to celebrate in a true May day manner. A contemporary wrote heatedly of what was going on—"They set up a Maypole, drinking and dancing about it many days together, inviting the Indian women to join them—dancing and frisking together." An outraged and prominent citizen got a few followers together and they advanced solemnly upon the offending Maypole and cut it to the ground, thereby destroying forever any formal May day celebration in America!

Returning to Elizabethan England, the May day began there just before dawn when the whole feminine part of the population rushed out into the meadows to bathe in the morning dew to ensure a beautiful complexion for the coming year. There is a contemporary picture of Queen Catherine and all her ladies-in-waiting "going out before sunrise to seek the Maydew bath." This "Maydew" bath apparently constituted the serious business of the day and after it had been seen to, all was given over to merriment and fun. Pantomimes were among the most popular entertainment and Robin Hood and his merry men mingled with milkmaids, jesters on hobby horses, Morris dancers and the May Queen herself with her attendants, to make what must have been a wonderfully colourful scene. The Puritans stamped out May day for a time but after their regime it was revived. In 1661 a huge Maypole, 134 feet high was put up in the heart of London, and festooned with flowers for the May day dances. It was one of the last to be used and perhaps it is symbolic of the encroachment of science on our daily life that this very pole ended its frivolous career in 1717 when it was bought by Sir Isaac Newton and removed to Essex as a support for his famous telescope!

ELECTRICITY in MEDICINE

CHAPTER II.

By Mildred C. Redmond, Hydro News

Many of the most powerful allies that the medical doctor has at his command today have emerged from the physics laboratory. And almost every day new wonders are being perfected. One scientist has written a fantasy of the future in which a doctor sits in his laboratory and makes a complete diagnosis of his patient fifty miles away, by pushing an elaborate series of levers and buttons. Although it may never quite come to this, modern X-ray diagnosis is something that the doctor of one hundred years ago would not have dared to dream.

The X-ray has been called the last great scientific discovery in medicine. All the important discoveries of this present century have had their roots in past experiments. The X-ray was stumbled on by Roentgen, a physicist, who had little idea of the amazing future that his discovery was to have. At first X-ray pictures were mostly curiosities, photographs of purses, for example, showing the coins inside or of small animals showing the general bone structure. X-ray pictures showing the organs of the body were unknown in average practice until the end of the first decade of this century. By accumulating the work of thousands of individual researchers, a science of X-ray diagnosis has now been built up whereby every organ and recess of the body can be seen. It is, without any doubt, the most valuable aid the diagnostician has; but it also serves other purposes.

Radium Supply Limited

Every year in the United States alone some 135,000 people die of cancer. In Canada approximately 40,000 Canadians were killed on active service during the war years. In the same period approximately 83,000 Canadians died from cancer. It has been found that both X-ray and radium are effective in treatment, but unfortunately the world's supply of radium is limited. However the latest news from the laboratory is that new super-giant X-ray tubes can be designed to produce rays that will out-radiate radium. For malignant growths X-ray tubes are needed which will stand much higher voltages than those used for X-ray picture taking. Cancers on the surface of the body can be treated with X-rays produced at 100,000 to 200,000 volts but a malignancy requires rays from much higher voltages. The principal

rays from radium are equivalent to those from an X-ray tube running on two million volts. Recent atom smashing experiments call for tubes that will stand 5 to 10 million volts and medical men are standing by to watch these experiments with great interest. Already several large hospitals on this continent now possess X-ray tubes to which a million volts or so can be applied safely. Some of these great tubes are twice the height of a man and each will furnish rays in quantity equivalent to those given by more than two pounds of radium or \$20,000,000 worth. The X-ray tube would only cost a few cents to run. It is hoped that very soon tubes carrying three million volts, already used in atomic work, can be turned into use for medical treatment.

New Field Of Diagnosis

The fact that the body discharges electrical reactions during its functioning has been the basis for a whole new field of diagnosis. Any muscle during its contraction undergoes a change of potential from one end to another. This fact of electrical charges following muscular contraction was first observed by D'Arsonval in 1870, nearly a hundred years after the reverse effect was demonstrated by Galvani. During the next few decades the presence of electrical waves was discovered in connection with functions of the nerves, heart, brain and other organs of the body. More recent techniques have revealed electro-dynamic fields with distinct patterns corresponding to specific types, species and individual living organisms. The majority of information about all these currents has been obtained since the advent of vacuum-tube amplifiers. All sorts of special equipment have been developed for studying specific manifestations, and research is all the time involved in making important new discoveries along these lines. However, of most importance is the immediate application.

Already modern electrical devices enable the doctor to listen to faint murmurings of the life processes or to measure feeble currents arising from heart, brain or nerve. Notable among these instruments is the electrocardiograph. The muscular contraction of the heart passes from above downward, moving from fibre to fibre, from muscle to muscle. This creates a difference in electric potential but so delicate that an ordinary galvanometer string is too coarse to be deflected by it. The galvanometer string of the electrocardiograph is as delicate

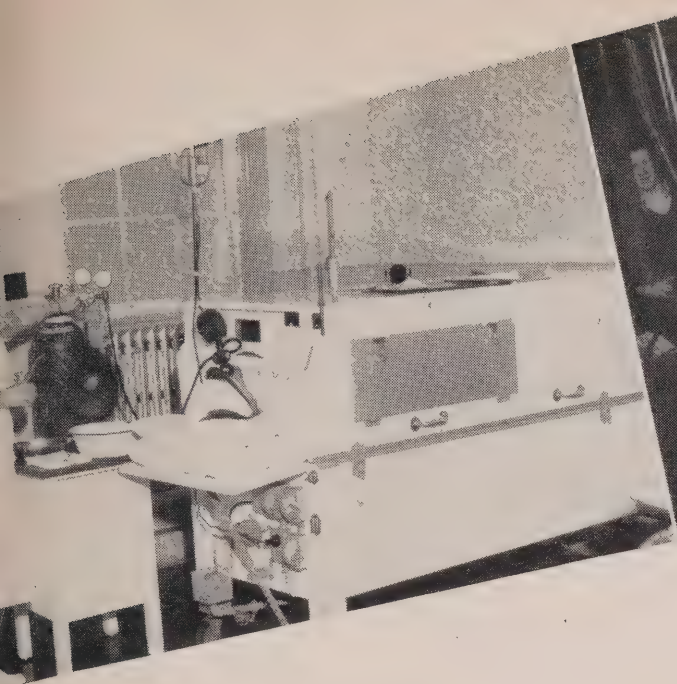
as a spider web and is usually made of platinum or some equally sensitive metal. It is stretched in a fixed electrical field. If an electrode of a plain piece of zinc is placed in close contact with the skin on one arm and a similar electrode on the other arm and they are connected to the galvanometer, at each beat of the heart the string makes a very delicate deflection. These deflections can be photographed making a record of each part of the heart contractions. This is the very general principle of the instrument. It shows irregularities of the heart action, and has proved to be of the utmost value in diagnosis and treatment. It has been said that this instrument has contributed more to an understanding of the normal physiology of the heart muscle and the irregularities of the heart and of the action of drugs, than all other methods combined.

Records Brain Rhythm

The brain, too, has its own characteristic electrical activity and there is now a delicate and complicated instrument known as the electroencephalograph whereby the brain rhythm can be recorded on paper. It operates exactly on the same principle as the electrocardiograph except that the brain waves are more feeble than the heart and so the instrument actually has to be nearly one thousand times more sensitive. The brain waves are picked up with small lead electrodes attached to the scalp with conducting paste and sealed on with collodion. When abnormal conditions are present they reveal themselves in the wave pattern. Its most important use is in the diagnosis of epilepsy. By a process of intricate measurements it is sometimes possible to locate a brain tumour or clot. The actual test takes about an hour during which the patient lies quietly in a small room carefully sealed off from any electric disturbance.

Surgery is another field in which electricity has played an important part. Electro-surgery is the name given to this new type of surgery where an electrical current is used instead of a steel knife. The instrument is called "knife" but actually looks more like a fountain pen, and from its tip a high-frequency, alternating current is sprayed into the tissue as it is cut, disinfecting and searing as it goes. One of its important advantages is that a surgeon can go ahead with delicate cutting without the interference of constant bleeding. Because of this it has

(Continued on page 6)



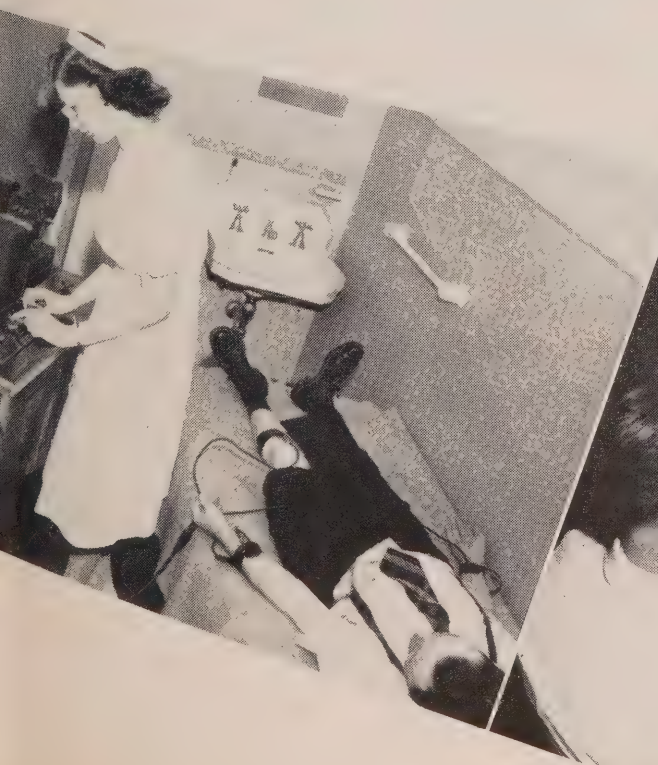
ARE a few (upper right) of the many thousand school students recently had X-ray tests for tuberculosis. The test itself takes only of seconds so that large groups can be done at a time.—National Sanitarium Association.

NT'S temperature (upper left) can be safely and accurately raised to 6 degrees and kept there as long as required by means of this fever apparatus. It is chiefly used in the treatment of neuro-syphilitic infections.—Toronto Western Hospital.

VE TYPE (right) mental cases respond favourably to the electric treatment. An electrode is placed on each temple and an electrical pulse is passed through the head.—Ontario Hospital, New Toronto.

ACTION (lower left) is being recorded by means of this electro- h, with a galvanometer string as delicate as a spider web. This record elpful in the diagnosis of heart disease.—Toronto Western Hospital.

ENCEPHALOGRAPH IS (lower right) the jaw-breaking name of te and sensitive instrument for recording brain waves. Its outstanding se is in the diagnosis of epilepsy.—Toronto Western Hospital.



ELECTRICITY IN MEDICINE

(Continued from page 4)

been particularly valuable in certain types of complicated brain surgery. Other advantages claimed for it are that it promotes quick healing and lessens post-operative nervous shock. This electric knife is a direct development of the investigations which made radio telegraphy possible.

It was observed some two thousand years ago that an insane man showed great improvement following a high fever. The observer, as it happened, was Hippocrates, known as the father of medicine, who lived on the island of Cos approximately 370 B.C. Five hundred years later, Galen, the greatest of all the Roman doctors made the same observation. But more than twenty centuries passed before anyone made use of this clue. Then in 1883, a psychiatrist became interested. An insane patient contracted typhoid fever and after the fever had passed, her reason was restored. The doctor began to reason that if a fever could be artificially induced it might restore certain cases to normal. For thirty years he worked on this idea with little success until he tried infecting a patient with malaria. This time it worked. Other experimenters followed and set to work to find some way of causing high fever without the dangers of malaria. Finally it was discovered that electricity could be adapted for the purpose. It could be used to give a man a high fever that could be measured and perfectly controlled. It has been highly successful in the treatment of all types of neuro syphilis, that is where the nervous system has been affected by syphilis. Fever treatment equipment is used extensively in modern hospitals including the mental hospitals where patients suffering from paresis, or syphilitic infection of the brain, are treated. The patient is put into an electrical cabinet with just the head out, and the temperature is brought slowly up to about 105 degrees, depending on the individual case. Each treatment lasts approximately five hours and an average course would be one weekly treatment for three months.

Electric Shock Treatment

One of the most beneficent roles that electricity plays in medicine must surely be that in which it aids those who walk under the terrible shadow of mental illness. What is known as the electric shock treatment has permitted many of these people to return to a normal life after a comparatively short period of treatment.

It had been observed last century that a convulsion often has a healing effect on certain mental cases. The reason was not understood except that a convulsion always causes a complete disturbance of the physiological equilibrium of the body.

Meduna, a doctor in Vienna, conceived the idea of trying to produce an artificial convulsion by injecting the drug metrazol. Later two research workers in Rome, Cerletti and Bini, had been experimenting with animals, for another purpose, and found they could produce artificial convulsions with electricity. When they heard of Meduna's work with metrazol, it occurred to them to try the electrical convulsion to alleviate mental disturbance. Their experiments, first tried in Rome about 1939, were a success and since then the use of this method has spread rapidly and most mental hospitals now have equipment and trained operators.

The electrically induced convulsion has certain advantages over the one caused by metrazol. For one thing the convulsion is immediate whereas with metrazol there is a delay between the injection and the convulsion which is hard on the patient. Also there are certain unpleasant after-effects with metrazol that electricity does not have. The treatment is entirely painless and is over so quickly that often the patient doesn't know he has had it and asks when it

is coming.

Those who benefit from the shock treatment are the large group of mental patients who come under the general heading of "depressive" types. They suffer from some variety of abnormal emotion, often extreme depression. Considering that this group accounts for, very roughly, as much as twenty to twenty-five per cent of all mental illness, it can be appreciated how important a beneficial treatment of this kind is in the fight against the rising numbers of mental cases. All these depressive types respond favourably to the electric shock and their illness is shortened from a matter of months to weeks. An average illness of this kind might run from three to six months, without treatment; with treatment the time is cut to approximately six weeks.

The treatment itself is remarkably safe with a mortality rate of less than half of one per cent. The whole process takes only two or three minutes so that many patients can be treated with one apparatus.

(Continued on page 18)



THIS IS a replica of the beautifully engraved silver tray which was presented by members of the Ontario Hydro Quarter Century Club to Dr. Thomas H. Hogg on his recent retirement as chairman of the Commission. The inscription reads, "Presented to Thomas H. Hogg, D. Eng., founder of the Ontario Hydro Quarter Century Club, upon his retirement from The Hydro-Electric Power Commission of Ontario, February 28th, 1947."

COMMISSION ORGANIZATION IS STREAMLINED TO MEET GREATEST EXPANSION IN HISTORY

**R. L. Hearn Is Appointed General Manager And Chief Engineer And Dr. Otto Holden And A. W. Manby Are Named Assistant General Managers, Engineering And Administration Respectively
—Other Important Appointments Are Announced**

By The Editor

Having expanded to the point where it ranks second in magnitude, in the matter of capital investment, only to the railways, which are Dominion-wide in their operation, and standing on the threshold of the greatest period of expansion in its history, Hydro in Ontario is now gearing its engineering and administrative structures to meet present-day conditions.

Reflecting a general streamlining in organization from the top level down, and conforming to sound principles of modern business enterprise, important new appointments have been announced by The Hydro-Electric Power Commission of Ontario. Effective March 24, R. L. Hearn was named general manager and chief engineer, while Dr. Otto Holden and A. W. Manby were appointed assistant general manager-engineering and assistant general manager-administration respectively.

Other appointments, which became effective April 1, are as follows: John Dibblee, manager of personnel; H. W. Beck, director of purchasing; A. H. Frampton, director of engineering; J. M. Hambley, director of operations; and M. J. McHenry, director of consumer services.

R. L. Hearn

In taking over the high responsibilities associated with the administrative direction of the Commission's operations and staff, R. L. Hearn can draw upon an extensive background of experience. Graduating from the University of Toronto in 1913 with the degree of B.A.Sc., he joined the staff of the Commission the same year as designing engineer. In 1918 he was appointed assistant engineer on construction, a position he held until 1921 when he entered the service of the Washington Water Company at Spokane as assistant chief engineer. In 1924, Mr. Hearn returned to Canada to become chief engineer and secretary-treasurer of H. G. Acres and Company, Consulting Engineers at Niagara Falls, Ontario. Six years later—in 1930—Mr. Hearn became identified with the Dominion Construction Co., and H. F. McLean Ltd., as consulting engineer and in 1934 was appointed chief engineer of that organization. In 1942, he returned to The Hydro-Electric Power Commission

of Ontario to become executive assistant to the chairman. From January, 1942, until January, 1944, he was on loan to the Polymer Corporation to direct and supervise the construction of the synthetic rubber plant at Sarnia. During 1945, Mr. Hearn was again on loan from the Commission, this time to act as Canadian technical adviser to the Public Utilities Division of the Combined Production and Resources Board, Washington.

Prior to taking over the duties of general manager and chief engineer, Mr. Hearn was chief engineer—design and construction.

The initials—R. L.—before the name of the new Hydro chief stand for Richard Lancaster which, somehow, seem to be very much in keeping with the down-all-round sweep of his broad-brim hat and his flashing, boyish smile. Mr. Hearn—known to his colleagues and friends as "Dick"—is a pipe and cigar smoker and has four hobbies in which he is keenly interested. He likes shooting—with his camera; he likes to paint pictures and to read good literature. (He reads *Hydro News*!) He also has a fine looking set of golf clubs and he really knows how to use them when he has the time. One other point about the new chief, who is Canadian born—his friends will be wishing him "Many Happy Returns" on May 18. Yes, he's in his middle fifties—a fact which is betrayed only by his hair.

Dr. Otto Holden

Hydro's assistant general manager-engineering, Dr. Otto Holden, joined the Commission in August, 1913, as a designing engineer. In 1918 he was appointed assistant hydraulic engineer of design and four years later was named hydraulic engineer of design. His next promotion came in 1924 when he took over the duties of assistant hydraulic engineer. Dr. Holden who was born in Toronto and educated at Brock Avenue Public School, Parkdale Collegiate and the University of Toronto, has three degrees after his name viz., B.A.Sc., C.E. and D. Eng.

Before coming to the Commission, Dr. Holden was rodman with the C.P.R. in 1911; a transit man with the Toronto Railway Company in 1912 and assistant engineer with the Public Utilities Com-

mission at London in 1913.

Over a long period of years, the Commission's new assistant general manager—engineering has been active in the affairs of a number of engineering and educational organizations. Included among important offices he has held are: chairman, Toronto Branch, Engineering Institute of Canada; president of the Royal Canadian Institute; president, Engineering Alumni Association, University of Toronto, while he was a member of the Council, Engineering Institute of Canada. Dr. Holden was also active on the international committee charged with the design and construction of remedial works in the Niagara river, and was a collaborator on the design of the proposed St. Lawrence development works.

A man whose personality is synonymous with the popular conception of a Peter Pan spirit and whose twinkling eyes reflect a keen sense of humour, Dr. Holden seems to take the most perplexing of problems in his stride. His Hobby? Well, he's quite disappointed if the latest in seed catalogues are not available before February is out. When in the North Country he also enjoys taking a few minutes out to demonstrate his prowess in the water.

A. W. Manby

It was in August, 1921, when A. W. Manby first joined the Commission staff to undertake electrical construction duties at Queenston. A native of Niagara Falls, Ontario, where he received his early education, Mr. Manby graduated from the University of Michigan with the degree of B.S.E. (electrical). For ten years he was chief operator at Queenston, while other positions he has held in the Commission service are: Superintendent for two years at Chats Falls; Niagara System chief operator at Toronto for five years; assistant chief operating engineer, Toronto, three years; assistant to chief engineer—operations—for six years. His new appointment as assistant general manager—administration—became effective March 24.

During the First World War, Mr. Manby was a Lieutenant in the Royal Air Force. He is a member of the A.I.E.E. and of the Association of Professional Engineers of Ontario.

Quiet, unassuming and friendly, Mr. Manby finds pleasant relaxation in hunt-

ing, fishing and bridge. The initials A W. stand for Aaron Woodrooffe.

John Dibblee

A native of Woodstock, Ontario, John Dibblee, the new manager of personnel was educated at Woodstock and at the University of Toronto, graduating with the degree of B.A.Sc. He joined the Commission in March, 1917, as a station design engineer. Following ten months in the Royal Air Force, he became district operating engineer, Eastern Ontario System—a position he held until 1926 when he was appointed general superintendent, Niagara Falls District. In 1931 he was appointed assistant chief operating engineer and in 1937 he became assistant chief engineer. In 1945 he was called upon to take over the duties of chief engineer—operations.

Before coming to the Commission, Mr. Dibblee had had practical experience as a foreman on many jobs, while he had also been a demonstrator in hydraulics at S.P.S. and a resident engineer with Kerry and Chase.

Throughout his career with Hydro, Mr. Dibblee has been keenly interested in personnel work and played an active part in developing the plan of position description and classification now in operation.

J. M. Hambley

Known as one of the most modest and retiring of men, Joseph Mervyn Hambley, the new director of operations, who has been with the Commission since June 1, 1930, was born at Copper Cliff and his birthday, incidentally, falls, on the 26th of this month.

Mr. Hambley received his early education at Copper Cliff and Sudbury and graduated in 1929 from Queen's University with the degree of B.Sc. His first position with the Commission was that of district engineer for Northern Ontario. Before joining Hydro, "Merv" as he is known to his friends and colleagues, was with the Canadian General Electric Company at Peterborough.

When at school and university, he was active in many sports and was president of his year at Queen's. He has a very soft spot in his heart for Ontario's North Country and he knows what to do when he gets a fishing rod in his hand.

A. H. Frampton

Arthur Herbert Frampton, who has been appointed director of engineering, is a native of England—of Gillingham in Kent to be exact—where he received his early education at Byron Road Council School. At 47, he is among the youngest of Canada's top-ranking engineers.

Arriving in Canada in his early teens, he was engaged in machine shop work before joining the Commission on May 1, 1917, as an assistant in the Strachan

Avenue Laboratories. At that time he was attending night classes at the Central Technical School in Toronto. During the winter seasons of 1921-22-23 and 24 he attended the Faculty of Applied Science and Engineering, University of Toronto, and carried on his duties with the Commission during the summer months. After graduating with honours and receiving the degree of B.A.Sc., in 1925, Mr. Frampton was appointed assistant engineer, station section, electrical engineering department. In 1930, he became assistant to the chief electrical engineer, and in 1938 assistant head of the electrical engineering department.

Mr. Frampton's affiliations and activities with engineering bodies are wide and varied. In addition, he is vice-president of the Engineering Alumni Association, Faculty of Applied Science, University of Toronto, and a director of the Alumni Federation of the same university.

Horoscope experts might attach interesting significance to the fact that May is a month which has been synonymous with important events in the life of Mr. Frampton whose birthday fell on May 23, 1899, who joined the Commission on May 1, 1917, and who graduated from university in May 1925.

In the matter of hobbies, Mr. Frampton keeps up with the seed catalogues and drives a nice ball on the fairways and he's "a not too enthusiastic fisherman." Perhaps, however, his greatest interest and pleasure find expression in educational work and youth training.

Not only has he been actively identified with the planning and preparation of the Electrical Engineering Department's course of work for junior engineers who join the Commission staff, but just recently he co-operated with the University of Toronto in planning a course under the general title of "Electric Power Systems." Mr. Frampton, himself, delivered the first two lectures in this course which is one leading to graduate degrees in applied Science.

M. J. McHenry

If the achievements of McGill University should require any upholding that institution has no more loyal champion than Morris James McHenry, the new director of consumer services. A B.Sc., graduate of that famous Canadian university, Mr. McHenry, who was born at Catasauqua, Penna., received his early education at Streetsville public school and at Humber-side Collegiate Institute.

It was in the year 1938 when the Commission, recognizing the vital need for promotional and educational programmes in keeping with the character of Hydro's service to the people of Ontario, called upon Mr. McHenry to direct these important activities.

Before coming to the Commission, he had held a number of important administrative positions in the electrical field. For a time, he was identified with Smith, Kerry and Chase, Consulting engineers, and he had been manager and secretary of the Walkerville Hydro-Electric System.

While with the Canadian General Electric Company Limited, he was sales engineer in Toronto and was later appointed manager of United States Sales, after which he became manager of Toronto District.

Mr. McHenry is a past president of the A.M.E.U. and of the Electric Club of Toronto. He also held the position of vice-president of the American Institute of Electrical Engineers. At present, he is president of the Electric Service League of Ontario, a director of the A.I.E.E. and a vice-president of the Canadian Electrical Council.

The word hobby, so far as Mr. McHenry is concerned, is synonymous with camera. (His colour slides, incidentally, are well worth seeing.)

His friends believe there is more than just a little Irish about him for his favourite colour is green which is in keeping with his "up and going" disposition.

H. W. Beck

From office boy to director of purchasing is the Hydro career to date of Horace Wilfred Beck who joined the Commission in 1910 while attending Upper Canada College, and who, during summer vacations in 1912-13 and 14 served as a hydrographer and instrument man.

At the beginning of the first world war Mr. Beck was continuing his studies at the Royal Military College. He enlisted in the Royal Canadian Horse Artillery, serving as a subaltern overseas. On his return to Canada in 1919, he joined the old railway department of Hydro, which at that time was operating transportation services in Toronto suburban areas as well as in Hamilton, Windsor, Guelph, Peterboro and other cities. As conditions changed most of these services were abandoned by Hydro and in 1922, Mr. Beck was transferred to the purchasing department. In 1927, he was appointed assistant purchasing agent, a position which he held continuously until the retirement of B. O. Salter.

The new director of purchasing, when buying for his personal use, includes such items as bulbs, seeds, fishing rods and woodworking equipment.

Osborne Mitchell

There are few Commission employees in the Administration Building who are not familiar with the tall, slim figure whose deliberate, methodical gait and bearing and quiet, pleasant smile seem so much in keeping with the high office

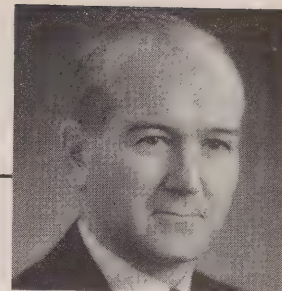
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NEW ORGANIZATION CHART

The Hydro-Electric Power Commission
of Ontario



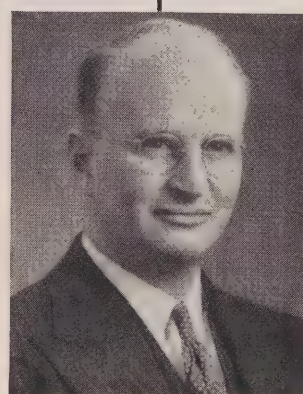
Hon. G. H. Challies
1st Vice-Chairman



W. Ross Strike, K.C.
2nd Vice-Chairman



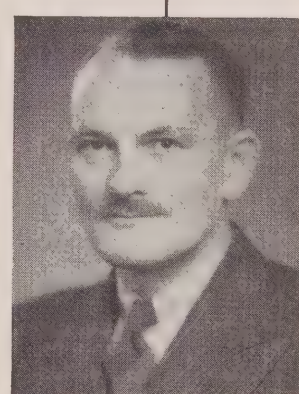
R. L. Hearn
General Manager and
Chief Engineer



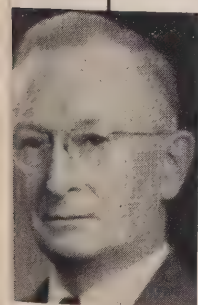
John Dibblee
Manager of Personnel



Osborne Mitchell
Secretary



A. W. Manby
Assistant General Manager—
Administration



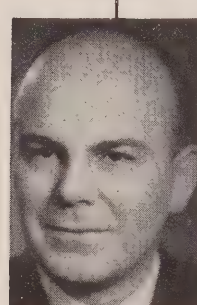
W. P. Dobson
Director of Research



H. W. Beck
Director of Purchasing



A. H. Frampton
Director of Engineering



J. M. Hambley
Director of Operations



M. J. McHenry
Director of Consumer
Services

COMMISSION ORGANIZATION

(Continued from page 8)

which he holds in the daily administration of Hydro Affairs.

Few would guess, however, that Osborne Mitchell, who has been secretary of The Hydro-Electric Power Commission of Ontario since November, 1933, had moved in the hustle and bustle of the publishing world in which he had the executive direction of a number of widely-read technical publications.

A native of London, England, Mr. Mitchell was educated at Sayer School, attended Hackney Institute from 1916 to 1918 and Northampton Engineering College, University of London from 1918 to 1922. On coming to Canada, he joined the staff of the Commission in April, 1923, and served for four years as an electrical designing draftsman. He resigned from this position to become assistant editor of *Electrical News and Engineering*. Later he was promoted to the position of editor of that and other publications and eventually became editorial director of the *Hugh C. MacLean* publications, leaving that position to take over the duties of secretary of the Commission.

Mr. Mitchell has served on the executive of a number of engineering organizations including the American Institute of Electrical Engineers.

In a pleasant rural environment in Streetsville where he resides, he can, when he has the time, find ample scope for gardening which is one of his hobbies. When not digging in the garden he can be found digging into good books or brushing up on his oil painting. Mr. Mitchell, however, disclaims the suggestion that he is an artist, but he does derive considerable pleasure from working on a canvas.

W. P. Dobson

On many occasions laymen have been bewildered and fascinated by the multiplicity of seemingly uncanny happenings at the Commission's laboratory at Strachan Avenue, where the skilled technicians, who inhabit this world of wizardry, conduct tests and experiments calling for the ultimate degree of precision and accuracy. The man, upon whose shoulders falls the responsibility for directing all these vital activities, which are directly and indirectly linked with the overall operations and functions of Hydro, is William Percy Dobson, the Commission's director of research.

A native of Ballinafad, Ontario, he received his early education in public school and at Harriston High School. He is a graduate of the University of Toronto from which he received the degree of B.A.Sc., in 1911. Awarded a research fellowship of the Engineering Alumni,

he returned to the University of Toronto and, at the 1914 convocation, received his Master's degree.

Mr. Dobson joined the Commission as assistant engineer in charge of the laboratory in July, 1914, succeeding General H. D. G. Crerar, who was commander-in-chief of the Canadian Army Overseas in the last war.

A man whose untiring service and research during the past quarter century has linked the name of Canada with many important advancements in the fields of applied science and engineering, Mr. Dobson had held the presidency, and other high offices in many leading national and international engineering and scientific societies, including the Dominion Council of Professional Engineers and the Canadian Council of Professional Engineers and Scientists, while he has been chairman of the Approvals Administrative Board of the Canadian Standards Association since 1940 and a member of the Executive Committee of that association since 1936.

Tall, erect in carriage and long of stride, he has what might be described as a rosy complexion, while his glasses seem to accentuate the twinkle in his keen eyes. When he has leisure time, Mr. Dobson is a keen student of science history and is an amateur field naturalist. He describes himself as a "has-been golfer."

Hon. George H. Challies

While Mr. Hearn as general manager and chief engineer and his associates will be responsible for the business administration of Hydro, the Commission will be responsible for the direction of overall policy. Two of the three executive members of the Commission are Hon. George H. Challies, first vice-chairman and W. Ross Strike, K.C., second vice-chairman.

Mr. Challies, who was appointed to the Commission in 1943, has had a long and distinguished career in business and public life. Born in 1884 at Winchester, Ontario, where he received his early education, Mr. Challies, following graduation from Woodstock College, attended the University of Toronto where he received the degree of Ph.M.B.

His election as reeve of Morrisburg marked the start of his career in public life. During that career, Mr. Challies has occupied many highly responsible posts. He has been a member of the Ontario Legislature continuously since 1929 when he was elected to represent the constituency of Dundas. It was not long before his ability as an administrator was recognized. In 1931 he became provincial secretary—a post he held until 1934. Upon being returned to the Legislature in 1943 as a member for Grenville-Dundas, he entered the Cabinet as a minister without portfolio and was appointed a Hydro commissioner.

A close student of Hydro for many years, dating back to his contact with the late Sir Adam Beck when the fight for "power at cost" was in its infancy, Mr. Challies achieved a reputation as an authority on Hydro affairs.

When quite a young man Mr. Challies was chosen by the Waterpowers Branch of Ottawa to aid in the design and construction of a scale model of the Winnipeg water power area, and in 1915 he was commissioned to build, for the Pan-American Exposition, a series of models showing typical water power plants across Canada and a map in perspective showing developed and undeveloped sites.

For many years, Mr. Challies was keenly interested in the Eastern Ontario Power Union and has been an active figure in O.M.E.A., church and fraternal society affairs.

Rugged and erect in appearance, Mr. Challies while fast-moving on his feet and in his actions, does not believe in expressing opinions until he has studied a question thoroughly. His hobby, like his work, is Hydro in Ontario.

W. Ross Strike, K.C.

W. Ross Strike, K.C., the second vice-chairman, was appointed to the Commission in June, 1944, when he was president of the Ontario Municipal Electric Association, and chairman of the Bowmanville Public Utilities Commission.

Born in Prince Edward County in 1895 and reared in the august atmosphere of the parsonage, Mr. Strike was educated in public and high schools in Eastern Ontario where his father occupied a number of town pulpits. In 1914, he was articled in law but the outbreak of the first World War interrupted his career temporarily.

During his three years active service in France he was wounded twice and was awarded the French *Médaille Militaire* at Vimy Ridge. After the war was over, Mr. Strike continued his study of law and graduated from Osgoode Hall in the Veterans' Class of 1920. He started practising with Tilley and Company in Toronto and, later, practised in Perth and Bowmanville.

From 1933 until 1937 inclusive, Mr. Strike was mayor of Bowmanville and was a member of the local utilities commission for eleven years.

Possessing a friendly, pleasing personality, Mr. Strike, as an after-dinner speaker, is known for his well-turned phrases and his sparkling witticisms. He is tall and athletic in appearance and walks with a deliberate stride. He is known to have more than just a passing interest in such items of sports equipment as drivers, putters and spoons.

In his younger days Mr. Strike was one of Canada's top-flight tennis-players.

BRANTFORD

By Grace J. Carter,
Hydro News

By its record of noteworthy achievements in the cultural as well as in the industrial fields, reflecting the foresight and industry of its citizens, Brantford has attained a position which ranks high on the roll of Ontario's enterprising cities.

Being a highly diversified industrial centre, its manufactured goods have found ready markets throughout the Dominion and, in some cases, throughout the world. A veritable hub of railways and highways, this city is a converging point for the products of a rich agricultural area, a factor which has helped make it one of Canada's leading export points. Another distinction of which Brantford is justifiably proud is that being the place where the telephone was invented, it has become known as "The Telephone City." A further indication of the progressive spirit which has been in evidence in Brantford throughout its history is the fact that it was one of the first cities to use electricity for lighting and power, and it has been served by Hydro since 1914.

As might be expected, Brantford has an interesting historical background. It seems that at the close of the American Revolution around the year 1784, Joseph Brant (Thayendanegea), an Indian leader, and his Six Nations followers settled on the banks of the Grand river on the site which later became Brantford. Among the things which these Indians brought with them was a Bible and a silver Communion service, bearing the royal arms and inscribed as the gift of Queen Anne in 1712. This communion plate is still preserved and may be seen in the Mohawk Institute. As a gesture of goodwill toward these Indians, King George III requested that a church be erected, said to have been the first in Ontario, to be known as "His Majesty's Chapel of the Mohawks." This church, built in 1785, still stands, picturesquely located on a hilltop overlooking the Grand river.

Named Brant's Ford

In the eighteenth century the Brantford district was known as Mississauga, but with the settlement of the Six Nations along the Grand river, the point at which they were accustomed to cross was named Brant's Ford, after their leader, who, it was learned, had arranged for a boom to be swung across at the place where the new Bridge now stands. Thus Brant's Ford, by common usage, was eventually

(Continued on page 13)



THIS STRIKING monument in Victoria Park was erected to commemorate the memory of Joseph Brant (Thayendanegea) an Indian leader, who settled with his Six Nations followers on the banks of the Grand River on the site which later became Brantford.



THESE ILLUSTRATIONS taken in the Brantford Public Utilities Commission show two of the bright, airy offices which have recently been redecorated. In the upper picture we have Norin Mitchell, biller; Thelma Townson, junior clerk; Betty Trenwith, biller; and Bob Ion. In the lower picture is Ruby Moore, Pearl Miller, Grace Symington, Margaret Harvey, Willa Thompson and Dorothy Tune.

BRANTFORD

(Continued from page 11)

shortened to Brantford.

For many years this territory was included in the reserve granted to the Indians and contained only a few stores and bartering posts, and it was not until 1830 that the townsite was surrendered to the Government for the site of the village. From that time on, progress was rapid. About 1840 a canal was constructed which gave access by water to Lake Erie, and the village subsequently became the head of navigation on the Grand river. With the coming of the railway in 1856, Brantford became a distributing centre for one of the richest agricultural areas in Western Ontario.

Known as the seat of Brant county, Brantford, located 66 miles west of Toronto, was incorporated as a town in 1847, and thirty years later, on May 31, 1877, became a city. Adhering to the policy of municipally-owned utilities, it today stands as a hub of commercial activity, backed up by sound civic financing and good living conditions.

This flourishing centre has been served by Hydro since 1914, when the first commission comprised Andrew McFarland, chairman; mayor John Spence and George Wedlake, commissioners. The first year of operation exceeded all expectations as over 1,500 customers were added. In 1915 the increase in business brought about the first reduction in rates

and necessitated adding equipment to the local substation. The municipal railway also became a consumer at that time, being the first large power user of the system.

Load Now Over 25,000 Horsepower

At that time the load was approximately 970 horsepower. Today it is well over 25,200 horsepower and serves 8,768 domestic, 1,393 commercial and 222 industrial consumers over a network of 97 miles of transmission lines.

Before Hydro, the cost of electrical energy in this municipality, according to the records, was 8 cents per kilowatt-hour. Since the inception of Hydro, however, there has been a steady reduction in the cost of service to consumers. In 1915, with an average domestic monthly consumption of 19 kilowatt-hours the average cost was 4.3 cents per kilowatt-hour. At the present time the average monthly domestic consumption is 188 kilowatt-hours, and the average net cost per kilowatt-hour is 0.97 cents.

Throughout the years a sound business policy has been followed by the Brantford Public Utilities Commission with the result that the final debenture payment was made in 1944. The present commission is ably administered by George Chamberlin, chairman; W. E. McLaughlin, vice-chairman; George Gordon, K. V. Bunnell, L. F. Snyder and mayor J. H. Matthews, commissioners; with W. R. Catton as manager and E. L. Gothard as secretary. This commission, with the

assistance of a staff of 32, has also under its jurisdiction the waterworks and the city bus transportation.

A Manufacturing Centre

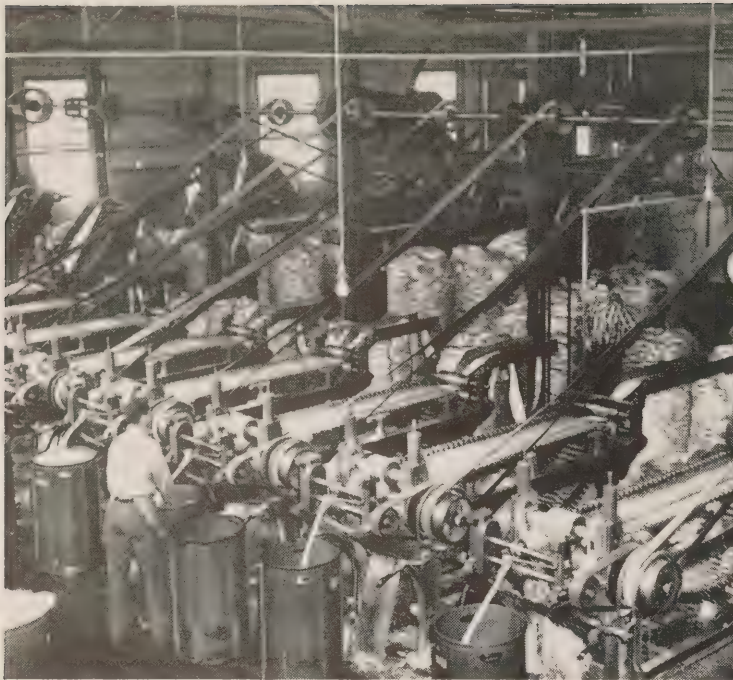
With the aid of low-cost Hydro power this aggressive community of some 35,000 inhabitants is essentially a manufacturing centre with a diversity of industries. Some of the products manufactured are: machinery of all kinds, roofing, truck bodies, waggons, pulp and paper machinery, radiators, boilers and engines, furnaces, bakers' ovens, malleable iron castings, washing machines, glue, hydrants, valves, electrical appliances, refrigerators, furniture, sporting goods, paints and varnishes, mill and road making machinery, high temperature cements and other structural specialties, builders' supplies, vaults, jewellers' supplies, interior wood finishes, clothing, abrasives, confectionery, bed springs and mattresses, stationery, piano actions and keys, solder, automatic burners, nuts and bolts, flour and feed and road paving material.

It is Brantford's claim that there are over 100 plants in actual operation, and one of these, the Brantford Cordage Company Limited, claims to be the largest manufacturer of binder twine in the British Empire. Another widely known firm is the Massey-Harris Company Limited, which is celebrating its 100th anniversary this year. From a small beginning in 1847, this company, now reported

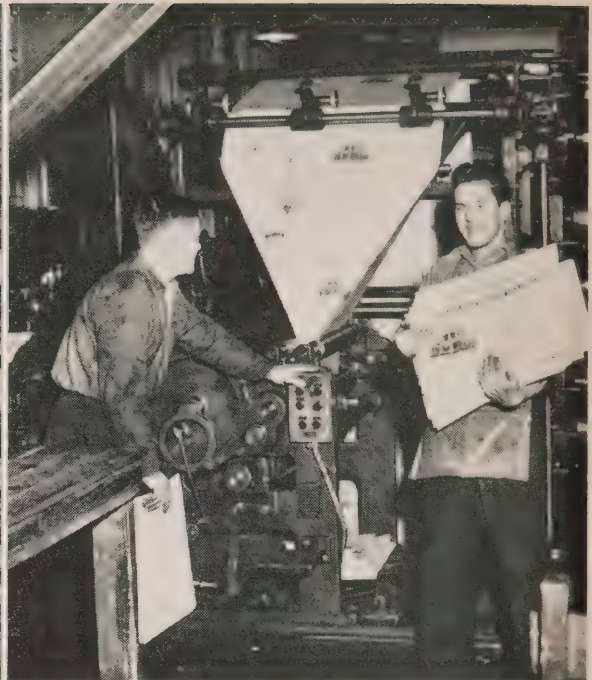
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THE BELL homestead on Tutela Heights just outside Brantford is now retained by the city as a museum. It was here that Alexander Graham Bell prepared the specifications for the first telephone in the summer of 1874. Two years later actual experiments were carried out, thus Brantford is justifiably proud of being known as "The Telephone City."



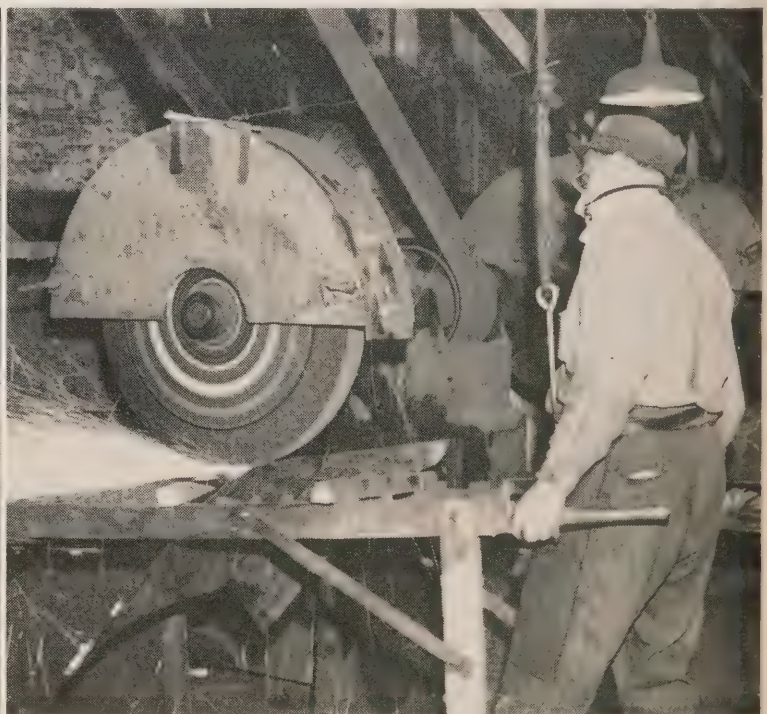
TAKEN IN one of Brantford's well established factories, which is said to be the largest twine makers in the British Empire, this illustration shows the raw material being combed, preparatory to spinning. This lineup of equipment is operated by a 75 horsepower motor.



HOT OFF the press! This was the first edition of The Brantford Daily Expositor coming off the forty page press which can turn out from 1,500 to 30,000 papers an hour. Bob Turnbull, foreman, watches closely that everything is running smoothly, while Leslie Swift "takes 'em away."



THIS SHOT taken in the Waterworks department shows part of the very modern equipment which includes two six million gallon pumps operated by 50 horsepower motors and one four million gallon pump operated by a 200 horsepower motor. The Waterworks system comes under the jurisdiction of the Brantford P.U.C.



THIS YOUNG man could hardly be accused of not "putting his hand to the plough." The actual operation in process is grinding a bowl head before polishing the plough. The line shafts for this equipment are driven by a 75 horsepower motor.

BIGGEST CONSTRUCTION PROGRAMME NOW IN PROGRESS, SAYS CHALLIES

Commission's Vice-Chairman Pays Tribute To Hydro Artisans At Construction Department's Annual Conference Dinner—Capacity Gathering Welcomed By David Forgan

By The Editor

Artisans of Hydro, whose combined skills and labours find expression in translating the language of blueprints into massive dams and humming power plants and in taming and harnessing the power of water for the generation of electrical energy, gathered in Toronto once again on March 28 for the annual conference and dinner of the Commission's construction department.

These men who, in the words of commissioner W. Ross Strike, K.C., are "in the front line of Hydro," and who "will be carrying the ball for the next five or six years," were welcomed by their chief, David Forgan, the Commission's construction engineer, who remarked: "This is one of the few occasions on which we relax in a year of hard work."

Numbering over 450, this year's gathering, he pointed out, was the largest

in the history of the construction department's annual conference dinners. Remarking that construction personnel were in the minority, Mr. Forgan said: "We deeply appreciate the interest shown by other departments of the Commission in this important event. We wish also to acknowledge our indebtedness to the Commission whose interest and co-operation contribute so much to the success of these occasions."

At one point, Mr. Forgan's keen Scottish sense of humour evoked prolonged laughter, especially when he quipped: "Work is the curse of the drinking classes."

High tribute to the work of the construction department was paid by Hon. George H. Challies, vice-chairman of the Commission, who pointed out that the biggest programme in the history of Hydro was now in progress. He expressed pleasure at the presence of Dr.

Thomas H. Hogg, the former chairman of the Commission, who has retired from that position and who is now acting in a consulting capacity. Before sitting down, Mr. Challies presented Dr. Hogg with a cigar which, from a distance, appeared to be about ten inches long. The doctor smilingly accepted, lit up and went to work.

Rousing Welcome To Dr. Hogg

Called upon to address the gathering which taxed the capacity of the King Edward's Crystal Ballroom to the limit, Dr. Hogg was accorded a rousing ovation. Loking tanned and very fit following his short vacation, he intimated that he had gained five pounds in the past two months and remarked: "It gives me a great deal of pleasure to join in with you boys with whom I have had so many years of service. And," he continued, "I am look-

(Continued on page 18)



GATHERED AROUND the festive board, these construction engineers and their friends naturally revive "old times." But they don't live in the past. Hydro's achievements in former days are only a spur to still greater achievements in the future.



FOLLOWING THE (top) very fine address delivered by Dr. J. Markowitz, O.B.E., the speaker of the evening, appreciation on behalf of the gathering was expressed by R. L. Hearn, general manager and chief engineer of the Commission. David Forgan, the Commission's construction engineer, who presided, is shown seated in the background.



WHILE AWAITING (left) the dessert, E. P. Muntz, one of Hydro's consultants, exchanges opinions with C. S. Grasett of the operating department.

RESPONSIBILITIES OF (lower left) office are forgotten for a while as Dr. Otto Holden (left) and R. L. Hearn (right) join with Jim Scott in a new rendition of popular ballads.

DISCUSSING THE (lower right) chances of the Maple Leafs winning the Stanley Cup are, among others, F. B. Shand, H. B. Tett, W. Jackson, E. M. Smith and F. J. Burns. Had they known what was to happen, they would have been more cheerful-looking.

LINE FOREMAN (bottom) Art Stephens (right) brought along his time-keeper, R. Davies (centre). As speeches were short, sweet and to the point his duties were merely perfunctory.



THE FLOWERS (top) that bloom in the spring are curysing to head table plants which blossom perennially. Left to right, they are S. W. Johnston, R. T. Jeffery (screened by his own "municipal" lighting), W. P. Dohson, A. W. Manby, C. A. Pitts, Dr. Otto Holden and R. L. Hearn.



LISTENING TO Dr. Markowitz are (right) Bob Lightbody and George Archer, in the background; Joseph Crothers and T. M. Parr, two guests, in centre, and Bert Myers, Garth Dowling and Walter O'Connell, in foreground.

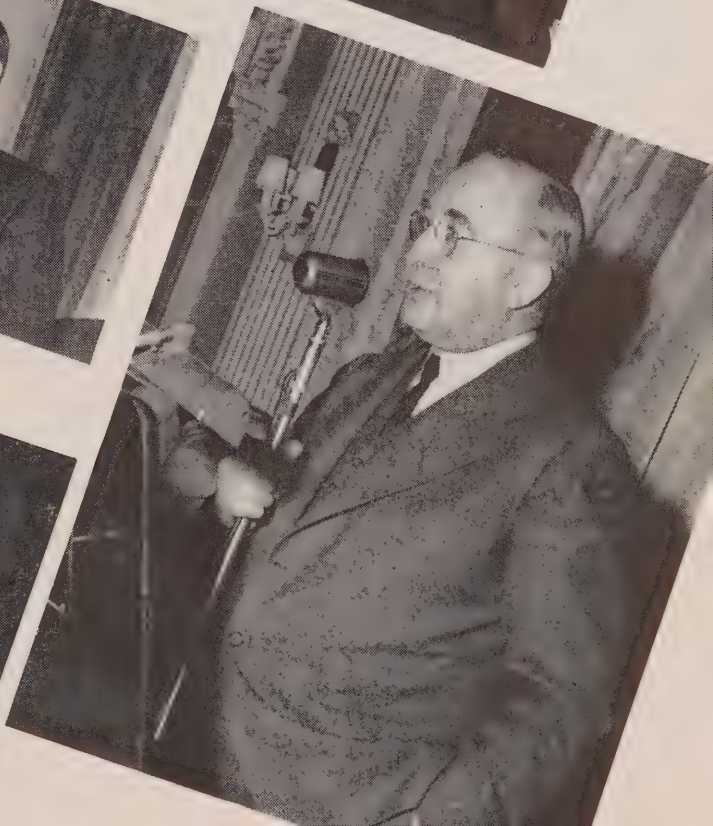


HYDRO'S OWN troubadours (lower left)—George Garnett and Albert Hamilton, (centre)—are singing the "Electric" aria from "New Frontiers", while two guests—Stan Meecham and Cy Johnson—come in with the refrain.

BEFORE "SPRINGING" (bottom left) one of his inimitable stories on the dinner audience, Hydro vice-chairman W. Ross Strike, K.C. is casting an appraising eye about to make sure that he will select one that has never been heard by anyone present before.



FIRST VICE-CHAIRMAN (lower right) of the Commission, Hon. George H. Challies, has words of praise and encouragement for the construction department. There must, however, be no resting on the oars. In the midst of a critical battle for more power, Hydro expects every man to do his duty.



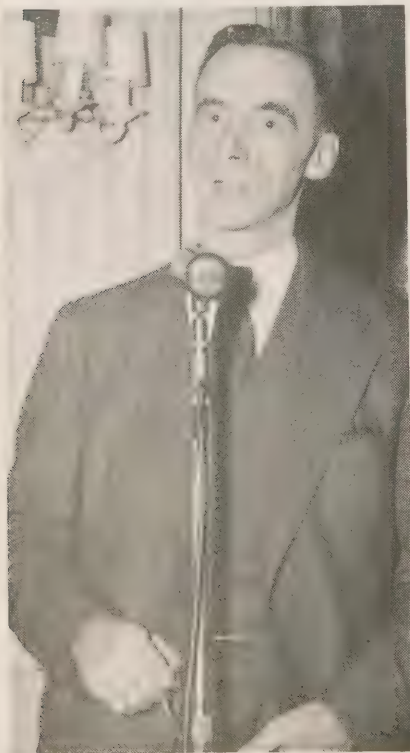
CONSTRUCTION PROGRAMME

(Continued from page 15)

ing forward to a few more years of service in the future and to attending these annual meetings."

At another point, he said: "I hope my period of service with the Commission will continue in a way in which I can be of help in the future from the standpoint of experience and where age and health do not affect my abilities too much. Conditions arise where it is advisable for a change. These conditions have arisen and I am here in the position of having retired—retired only in the sense of being away from the administration side of the work."

Proceeding, Dr. Hogg remarked: "I had the pleasure of addressing a meeting of department heads some weeks ago when they gave me a very nice luncheon and made some very kind remarks. At that time I repeated an old Chinese proverb which seems very fitting in my case. When you reach my age you begin to appreciate that rest and some of the enjoyment of the quieter things of life are to be appreciated. That is why this proverb is so fitting: 'Enjoy yourself; it is much later than you think.'



MEET THE Chairman of the evening David Forgan, the Commission's construction engineer, who welcomed this year's record-breaking gathering the annual construction conference dinner.

The load has been pretty heavy during the past few years and it is with the most happy and kindly feelings that I am retiring from the active administration of the Commission's affairs. When I say 'enjoy yourself' I do not intend to sit back entirely, but I hope I will be able to do what I want to do in the future. I am very grateful to you, Mr. Chairman, for the opportunity of again meeting my fellow employees of the Commission—men with whom I have worked for the last 35 years and men whom I can still class as my friends." (applause)

A man whose name stands high on the roll of the medical profession, upon whom was conferred the O.B.E. for distinguished war service and who was a prisoner of the Japanese was the principal speaker at this year's conference dinner. Introduced to the Hydro gathering by Dr. R. W. Urquhart, the Commission's medical director, Rumanian-born Dr. J. Markowitz not only recalled many of his experiences with the Japanese but discussed present conditions in Great Britain.

Praises British People

"There is nothing wrong with the people in the United Kingdom today," said the speaker. "The only thing wrong is that they spent their money fighting for you and me. The people of Britain got where they were before the war by brain, character and integrity. The most wonderful things in our civilization—material and spiritual—I do not have to tell you engineers—the finest things came from that little island on the northwest corner of Europe, and I want to tell you that in another 30 years, the star of Britain will be higher and brighter than ever." (applause)

Dr. Markowitz next emphasized the fact that the last war had been fought with three predominant principles in mind. The first was the dignity of the common man. "According to this principle," he said, "no man, no matter how humble, could have his dignity outraged. The second principle is that of the right of free speech. Now, my friends, I have no use for Communists at all. Neither have you. I think they are crazy, but the principle of free speech is so sacred that the existence of Communism is not so important that we have to give up this principle. The third principle for which the war was fought was the right to govern ourselves. If we hang on to these three principles we are not going to go far astray. These are distinctly British principles. We do not have slaves."

Continuing, Dr. Markowitz remarked: "I have been beating the drum for the British Empire. The history of the Empire is 1,000 years old. The history of the German people, who are a brave and very able people but who have gotten off the track, is practically only 100

ELECTED PRESIDENT



FRED H. CHANDLER of the H.E.P.C. electrical engineering department was elected president of the Toronto Electric Club for the 1947-48 season.

ELECTRICITY IN MEDICINE

(Continued from page 6)

The patient lies down and an electrode is placed on each temple and held in place with a rubber band. The electrodes are covered with jelly to cut down resistance. Then an electrical impulse is passed through the head for approximately one tenth of a second. This is an alternating current of 60 cycles. There are variations of voltage and timing, depending on the type of equipment. The shock apparently relieves the accumulated tensions that have piled up to cause the condition. After treatment the cerebral rhythm of the patient is changed when tested.

These are only a few of the highlights in the present field of electricity in medicine. With modern research working at unprecedented speed and with ever-widening scope, it is certain that the next few decades will bring forth many new and even more powerful aids to medical science.

years old."

Reading between the lines of the speaker's references to the conditions in the Japanese prisoner of war camps, his listeners could readily form impressions of the harrowing and almost unspeakable treatment received by prisoners.

R. L. Hearn, general manager and chief engineer of The Hydro-Electric Power Commission of Ontario, thanked Dr. Markowitz for his interesting and informative address.



EAGERLY ANTICIPATED by Hydro construction men is the annual conference dinner of the Commission's construction department. This year it attracted a record-breaking gathering, with representatives of other departments and many guests attending. Dr. R. W. Urquhart, the Commission's medical director, is shown at the "mike" as he introduced Dr. J. Markowitz, O.B.E., the speaker of the evening. Dr. Thomas H. Hogg (above) is smoking an outsized cigar presented to him by Hon. George H. Challies, Hydro's first vice-chairman. John Dibblee, manager of personnel, is enjoying the aroma.



WHEN THE Hydro News' photographer approached this table an animated conversation was in progress, with Harry Foy, H. V. Armstrong and F. H. (Buck) Chandler taking the leading vocal roles.

ROY HARMER (standing) was recounting an amusing anecdote when this shot was taken. Among those tuning in were Dave Fleming, Tom Bernard, Dave Chambers and "Buck" Chandler.

AT THIS table the boys were apparently hungry enough to settle for chicken and were waiting for the kids to turn up when along came the Hydro News' photographer. G. L. (us (centre) is doing a "radar" on the kitchen. Grouped around (left to right) are A. G. Brenneman, Dunc Callum, Fred Gardiner, Bob Hillery, Merv Hamblly and Frank Lawson.



PUPILS SHOW MARKED ENTERPRISE IN DESIGNING HYDRO PROJECTS

**Form Part Of Social Studies
At Strathcona School
In Hamilton**

**By W. Ronald Mathieson,
Hydro News**

Posters, maps, charts, murals and even a table-top model of a power development moulded out of sand, bear testimony to the enterprise of pupils at Strathcona Model School, Hamilton, where Hydro formed the subject of a number of interesting projects, undertaken and completed as part of the curriculum prescribed by the Department of Education.

The work involved not only a study of the life of the late Sir Adam Beck but a review of the history of lighting and other allied subjects including the generation of power and reasons why an incan-

descent lamp bulb gives off light.

Under the direction of Miss T. K. Jackson, the teacher, and with the full authority of principal J. A. Little, the students selected projects to illustrate their work and the story associated with Hydro in Ontario. Using as their examples the Queenston-Chippawa development and the Ogoki Diversion and the material gleaned from *Harnessing Horsepower*, an educational booklet issued by the Commission, along with geography text book maps, they completed a series of projects.

Table-Top Plant

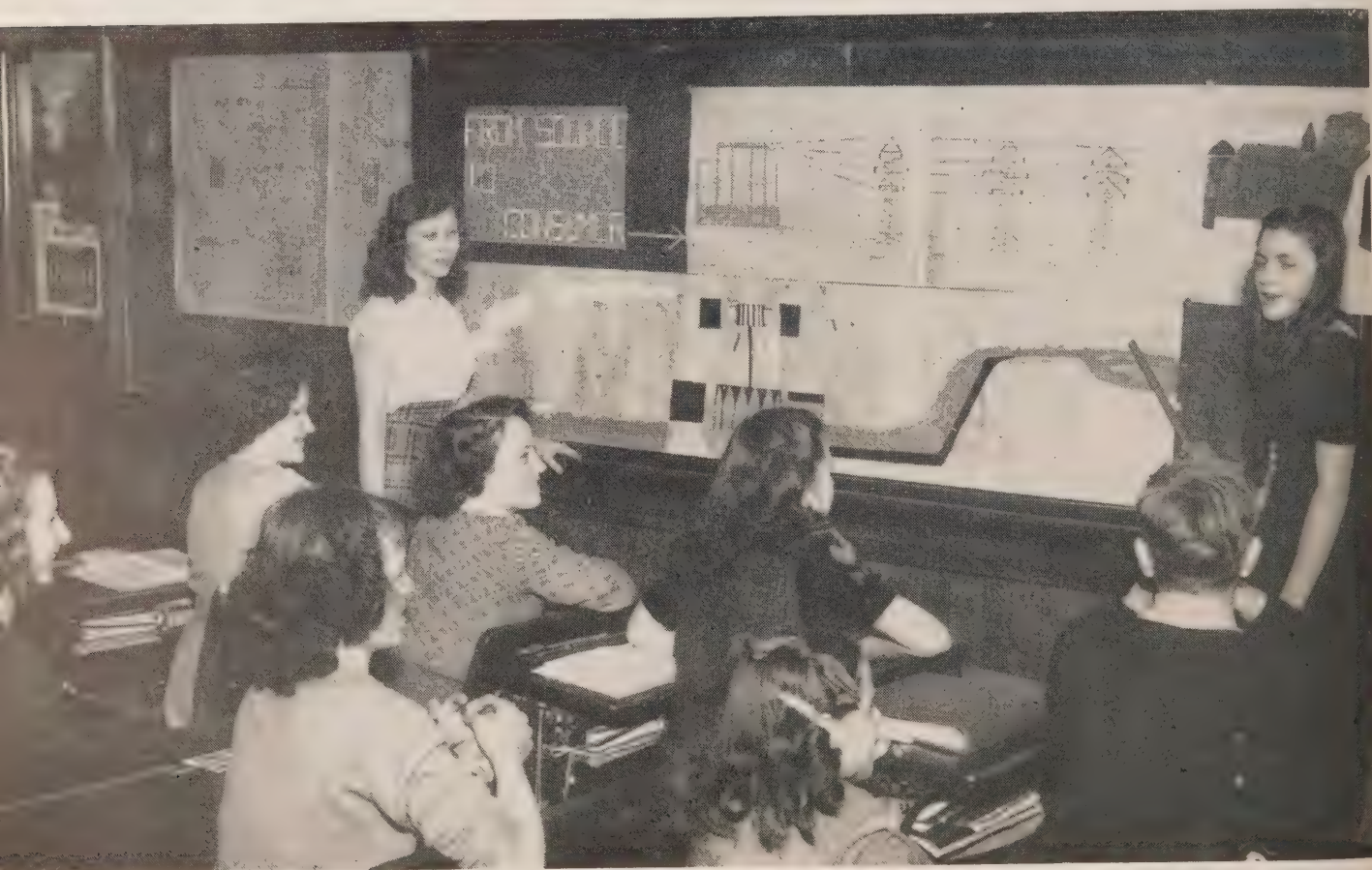
At the back of the classroom, Bob Pettigrew, Larry Alford and Bob Morrison had created the model of the power plant on the sand table. Faithful in every detail, even to penstocks and the canal, this project showed the flow of water

by means of colour. In addition, each key part of the table-top plant was neatly identified so that other students and visitors could readily understand the layout of a power development.

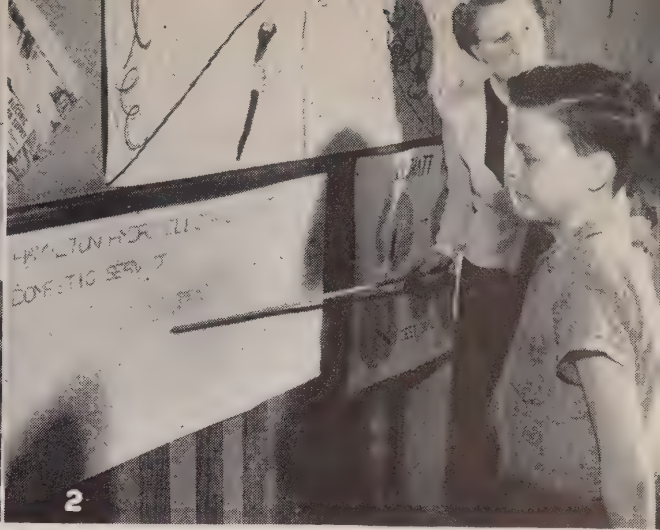
Donna Lloyd, Lillian Simms, Phillip Brooks, Frances Kilkaly, Beverly Henly and Keith Reid united their efforts in producing a series of murals which, when hung together, depicted a complete story of power. This project starts with the clouds in the sky and rain falling to the earth, creating rivers and lakes and then shows how man harnesses and controls the power of water for the generation of electricity. This project also shows how the electricity taken from the power plant and transmitted and distributed over lines operates electrical equipment which the students had illustrated in full colour.

Coming into the technical end of how electricity does its work when delivered to a home, boys and girls together had drawn a toaster showing how the element

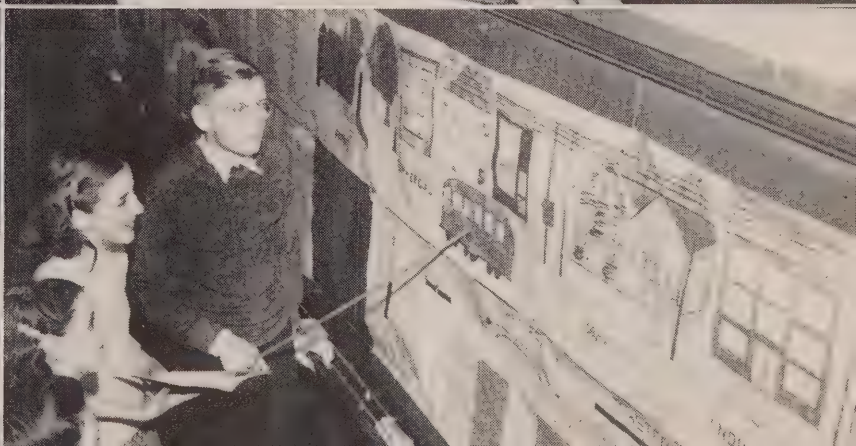
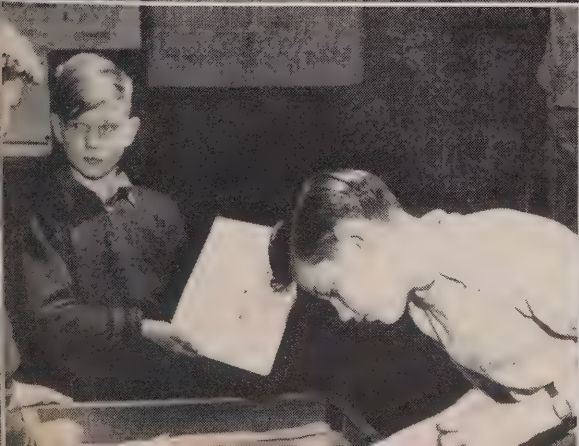
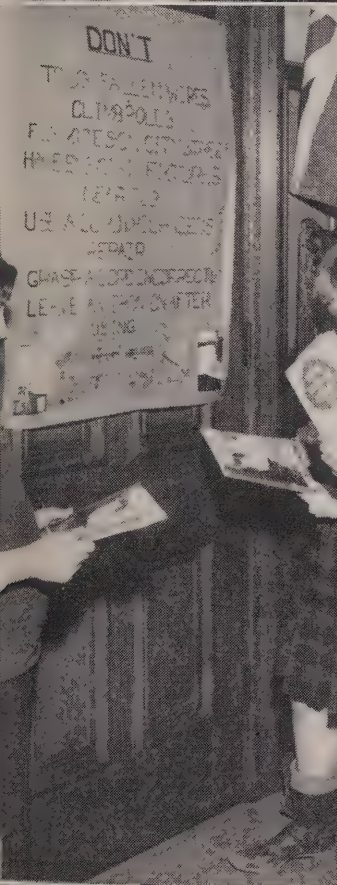
(Continued on page 32)



BOYS AND girls of the Strathcona Model School in Hamilton learn about electricity and various functions of The Hydro-Electric Power Commission of Ontario by constructing projects. They also point out and explain to their fellow students their own particular phase of the work. Here we have Donna Lloyd, (right) who helped make the exhibit illustrated above, tracing out the flow of water in a typical Hydro plant.



HYDRO, ITS operations and functions, formed an important part of the social studies at the Strathcona Model School, Hamilton, this year. Pupils in Grade 7, many of whom undertook interesting Hydro projects are shown in No. 1. Miss T. K. Jackson, their teacher (No. 2) explains the details of an electric bill to Donald Tytler, Elsie Ladanchuk and Bill Reid. Checking over their safety rules are Billie H. Smith, John Murray and Mary Etherington (No. 3). Included in No. 4 are Jim Blanche, Phillip Brooks, Donald Woods, George Moore, Lorne Mayall and Billie L. Smith, who are working on their battery-operated telegraph set. In this case (No. 5) Bob Pettigrew, Larry Alford and Bob Morrison check the accuracy of their model of Hydro's Queenston-Chippawa plant. Phillip Bourks, Frances Kilkaly, Beverley Henly and Keith Reid (No. 6) review some of the uses of electricity.



TREMENDOUS PROGRAMME FACING COMMISSION

A. H. Frampton, Director Of Engineering, Says Seven Years' Work Must Be Accomplished In Four—Addresses Hydro Construction Men

From a total load of 900,000 kilowatts and an investment in terms of dollars of \$260,000,000 in 1936, Hydro's load has doubled and the investment is now approximately \$400,000,000. The average load increase in the ten-year period has been around 70,000 kilowatts with the exception of 1946 when the increase was 229,000 kilowatts.

These facts were emphasized by A. H. Frampton, the Commission's director of engineering, in an address to Hydro construction men from all parts of Ontario recently when he outlined the tremendous programme facing Hydro in the years ahead.

He not only paid warm tribute to the work of the construction department but expressed confidence in their ability to press forward with undiminished vigour and determination in overcoming future problems. Some indication of the tremendous task ahead was given by Mr. Frampton when he remarked: "Seven years of construction work must be accomplished in four years. This amounts to about twice as much in a year as you had counted on doing."

During the war, the director of engineering said, not one of Ontario's industries had been deprived of power. With the cessation of hostilities the anticipated decrease in demand for power had not materialized.

Instead, he said, almost overnight, war

industries had reconverted to peace-time operation. As a result, electrical suppliers in many parts of the world faced unexpected difficulties in meeting the sudden new demands for power.

Continuing, he said: "Your difficulties will start with personnel, as there is a lack of trained men in the construction field. Coupled with this goes the nightmare of material shortages." Lumber was mentioned as being only one of the materials now harder to obtain than at any time during the war.

Outlining the construction work ahead, the speaker stated that an addition was being made at DeCew, work at Stewartville was progressing well and construction at DesJoachims was now proceeding and the Aguasabon project was shaping up satisfactorily. When these stations did come into operation, however, and increased available power to a total 420,000 kilowatts, they would do little more than meet immediate demands.

Knowing this, the Commission, Mr. Frampton stated, had already investigated the possibility of building more plants which, in turn, would supply more power to Hydro. He intimated that the Mada-waska river could be harnessed in four more sites and that two more developments could be located on the Ottawa River.

High tension lines, said Mr. Frampton,

were being constructed from Barrett Chute to Oshawa and also from Niagara Falls to London. In addition to the 220-volt transmission system being augmented by construction of a fifth circuit, it would be necessary to build the transmission lines from the DesJoachims development to the Kipling and Burlington terminals.

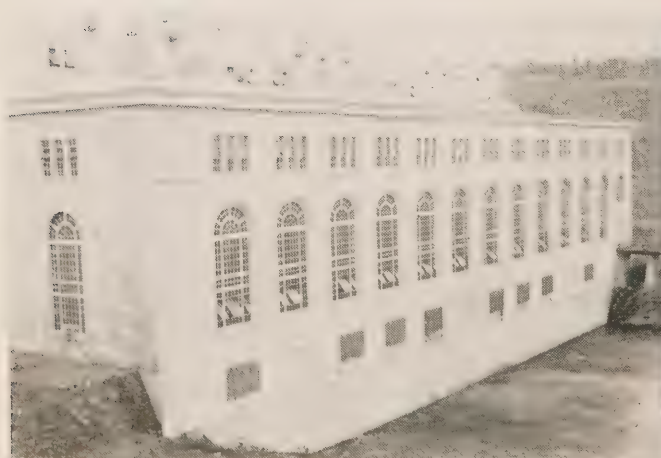
Speaking of Kipling, which is on the outskirts of Toronto, Mr. Frampton paused long enough to explain the plans for the expansion of this new station into a major 220 Kv. terminal.

Blackhorse station at Welland was also being planned, he said, as were new 110 kv. projects at London, Windsor, Owen Sound, Hanover and Barrie. The last three, he pointed out, would be interconnected with the new Barrie-Owen-Sound Line.

Citing statistics showing how rapid load increase had affected station capacity, Mr. Frampton noted that of the 365 substations of the Commission in Southern Ontario, 61 had been overloaded in 1943, 113 by 1944, 179 by 1945 and, in 1946, 220 had reached the overload mark.

The conditions prevailing in the Southern half of the Province could be duplicated for Northern Ontario, the speaker concluded, and it was going to take every ounce of brain and brawn to keep up with the construction work of the future.

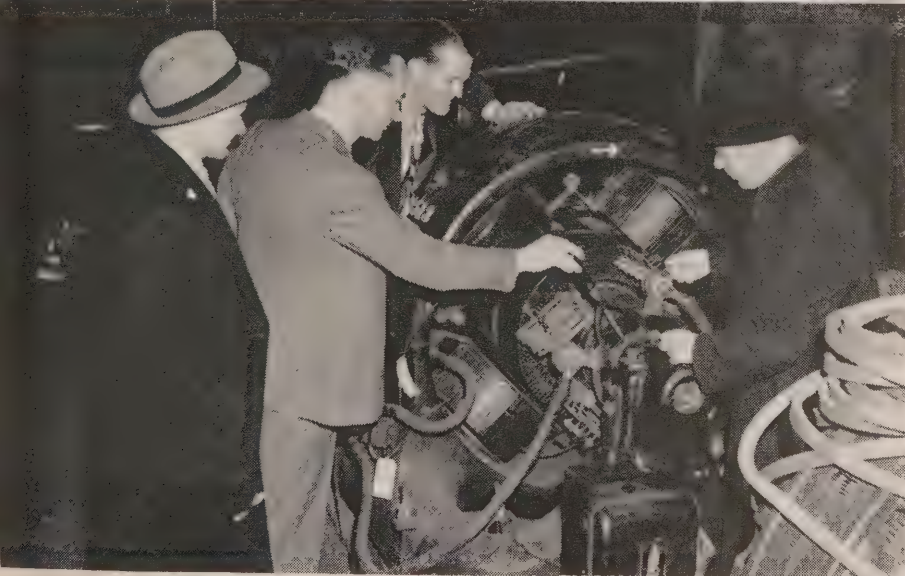
DAY AND NIGHT AT CAMERON FALLS DEVELOPMENT





THESE HYDRO officials were having some noon-day nourishment when this photograph was taken at the Commission's Bloor Street Stores. A desk, draped with a cloth, served as a table. The occasion was the annual gathering of Commission Construction men. Luncheon is cafeteria style with sandwiches, sausage rolls, apple pie and mugs of coffee—served a la rough. Included in the picture are: Gordon Mitchell, "Bill" McKenzie, both of the construction department; A. H. Frampton, director of engineering, Dave Forgan, construction engineer, Dr. R. W. I. Urquhart, and Wills MacLachlan.

HERE IS an interesting group from the construction department. They have a total of 625 years' service with the Commission. In making presentations to these loyal and faithful employees, Mr. Forgan remarked: "The thatch may be white, grey or missing, but there is no moss or mildew under the substructure. They have not become mummified by time and have learned to swim in a sea of trouble."



BEFORE THE luncheon the men inspected the stores and equipment, and renewed old acquaintances. This piece of equipment they are studying is a battery charger. Included in the picture are: F. Gery Cooper, who has put in many months of work at De Cew; William A. Granger, who is the assistant shop foreman at Bloor Street; D. J. Preston and Geoffrey Porter.

THESE ARE young ladies who handle the office routine at Bloor Street Stores and who help brighten the place up considerably. From left to right they are: Doreen Kerr, "Georgie" Williams, June Harris, Dorothy McMullen, Marion Saver, Marie O'Rourke, Pat Patton and Carolyn Abba. At the time when this picture was taken, they were in their lounge having a sample of the food that was being served to the visiting construction men upstairs.





CHAIRMAN at BRANTFORD



GEORGE E. CHAMBERLIN, chairman of the Brantford Public Utilities Commission, is a newcomer to the commission, this being his first term of office. According to the records he was born in Ottawa in 1886 and received his education there.

When not engaged in routine duties, Mr. Chamberlin enjoys such sports as fishing and hunting, and also takes an active interest in photography.

COMMISSIONER SNYDER

LEONARD F. SNYDER is serving his first term as a commissioner on the Brantford Public Utilities Commission. During 1946 he was an alderman.

Born in Brantford in 1905, he attended public school there and later went to Ridley College, where some of his spare time was devoted to rugby. For the past few years, however, he has been identified with amateur hockey circles in Brantford.

COMMISSIONER GORDON

GEORGE THOMAS GORDON has been a member of the Brantford Public Utilities Commission for the past three years. During 1946 he served as chairman. In 1935 and 1936 he was a member of the City Council and has also served as chairman of the Board of Health.

Dublin, Ireland, was his birthplace and Leeds, England, was where he received his education. Mr. Gordon is actively interested in music, being a choral singer and president of a noteworthy church choir. He also plays a trombone.

VICE-CHAIRMAN



WILLIAM EDWARD McLAUGHLIN, vice-chairman of the Brantford Public Utilities Commission, has been a member of the commission for the past three years. From 1928 to 1933 he served as an alderman.

Born in 1881 in Exeter, Ontario, he went to live in Brantford at an early age and received his education there. Mr. McLaughlin admits that he is very fond of fishing.

SECRETARY - TREASURER



For the past twelve years EDWIN LUTHER GOTHARD has been secretary-treasurer of the Brantford Public Utilities Commission, and prior to that, from 1930 to 1935, he was secretary-treasurer of the Brantford Water Commission.

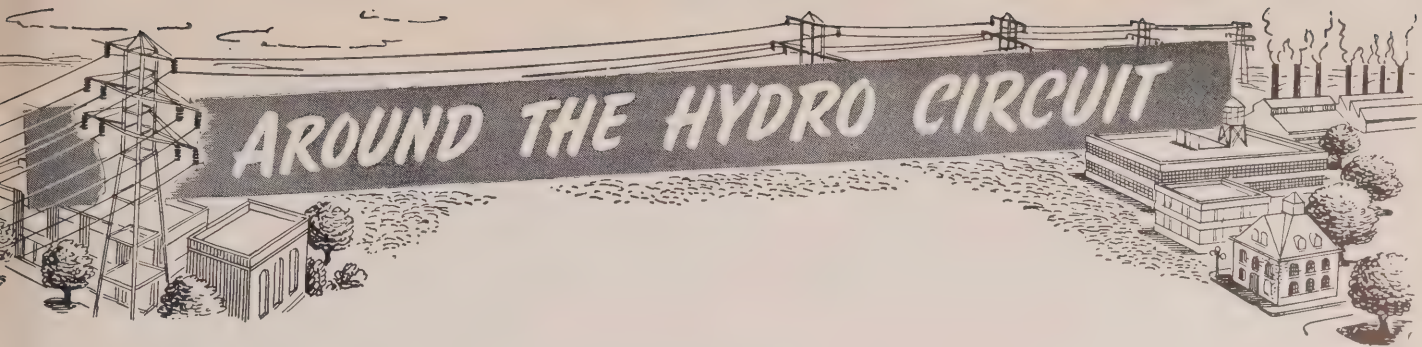
Born in 1887 at Yorkshire, England, he attended public school and technical college at Batley, Yorks. Mr. Gothard takes a keen interest in painting and is recognized as a fine amateur artist.

MAYOR MATTHEWS

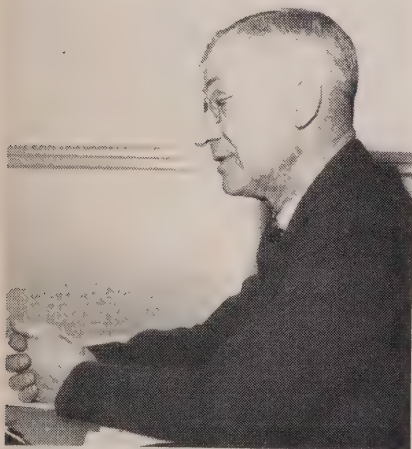
JOHN H. MATTHEWS has been mayor of Brantford for the past two years and is, therefore, an ex-officio member of the local commission. He is well versed in municipal affairs, having served on the City Council from 1925 to 1930 and then again from 1933 to 1942. He was a member of the Hospital Board of Governors from 1935 to 1946; served on the Trades and Labour Council; chairman of the Finance Committee for two years and of the House Committee for seven years.

He was born in 1888 in Guernsey Island and attended schools in the Channel Islands. In 1909 he came to Canada, and settled in Brantford in 1916.

Mr. Matthews says his principal interest is in municipal affairs, but he also enjoys reading good literature.



MANAGER at BRANTFORD



WILLIAM RUSSELL CATTON, manager of the Brantford Public Utilities Commission, has been associated with Hydro for 37 years. From 1910 to 1914 he was a member of the staff of the H.E.P.C. In 1914 he was appointed superintendent of the Brantford commission, and in 1916 took over the position of manager, which post he has held ever since. He is also manager of the waterworks system.

He was born in Burford, Ontario, in 1886, and attended schools in Brantford. Mr. Catton is known to his friends as a nimrod, with emphasis on hunting and fishing.

COMMISSIONER BUNNELL

Born and educated in Brantford, Ontario, **KENNETH VERNER BUNNELL** has served as a commissioner for the past two years on the local public utilities commission. Prior to that, during 1944 and 1945, he was on the Board of Education, and in 1925 and 1926 he was elected alderman.

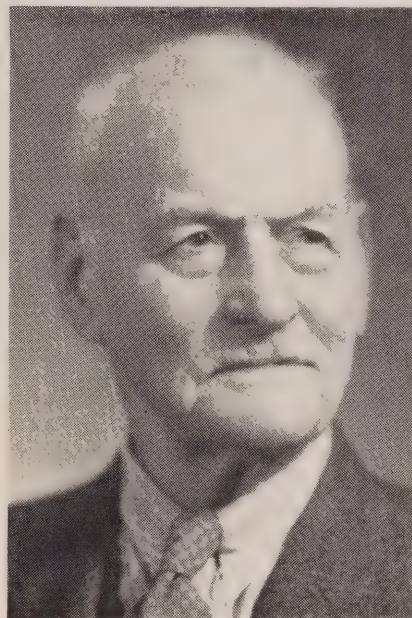
During the First World War Mr. Bunnell was assistant adjutant with the 125th Battalion. Leisure time does not hang heavily on the commissioner, as he is an ardent devotee of horticulture.

Mr. Bunnell is proud of the fact that his forebears have been closely identified with the district, his ancestors having settled in Brant County in 1808.

AHOY THERE!

A vigorous gentleman with a booming voice and a handshake like a vice, **CAPTAIN WILLIAM D. GRAHAM**, master mariner, who retired from the service of The Hydro-Electric Power Commission of Ontario in 1934, and who resides at St. Catharines, celebrated his 92nd birthday on May 12.

Back in the old schooner days, Captain Graham, who was born the last year of the Crimean War, started work as a boy at six dollars a month. His first job was serving as a horseboy on the good ship "Jennie Graham" and his duties involved looking after the horses that were used aboard boat to work the



timber capstan and raise or lower the two raffles above the topsail yard.

To this day, Captain Graham carries little white scars on the base of his fingers—a reminder of an incident that happened 74 years ago when he clung for life to the chain plates of a vessel in the icy waters of Lake Huron.

He was associated with the Toronto

MEET ANDY CLARK



A. T. (Andy) Clark and Dave Forgan came to Canada together in 1911 to find out what "the colony" had to offer to engineers. Dave is now construction engineer for The Hydro-Electric Power Commission of Ontario, and A. T. Clark is plant engineer at the Commission's Bloor Street Stores.

Mr. Clark, who is shown above, was born in Glasgow and graduated from his home town university as a civil engineer. His first job in Canada was with the Canadian National Railways, and he later served the City of Toronto as a waterworks engineer. Mr. Clark came with the Commission in 1918 as a construction engineer. He is married, has raised three children and at one time, his friends say, he played a spectacular game of golf.

and Niagara Power Company, and when it was taken over by the Commission in 1920, he came with the property department as a right-of-way agent, and acted in this capacity until his retirement.

A man who enjoys good fellowship, the "old salt" likes nothing better than an evening with his friends and an excuse to "splice the main brace." Incidentally, he is a keen reader of Hydro News.

GET BACK INTO NORMAL SWIM FOLLOWING DEVASTATING FLOODS

**Hydro Services Maintained In All Areas With Exception Of Dresden—
Flood Waters Cause Several Short Circuits**

Life in most of Southwestern Ontario is picking up where it left off after a period of the most severe floods in history. Cities, towns, villages and fertile farm land have emerged from the silt deposited by the waters and a cleaning up process is proceeding.

Throughout the flood, Hydro service was maintained in all areas with the exception of Dresden where the station was cut out of service as a precautionary measure when the water rose to a point where it would be dangerous to continue operations any longer.

Water in flooded basements caused several short circuits which blew fuses but damage to Hydro property was very light.

Extent of the damage to farm lands will not be known for some time as the winter crops already in the ground may yet come up, but in other areas Hydro News was told that the seed had been washed out.

Bad Time In Grand Valley

In Wallaceburg, a layer of silt clogged the sewers and hindered the recession of the Sydenham river but utility officials made every effort to clean out drains as quickly as they became plugged. A head office representative of the Red Cross arrived in town to set up a temporary hospital and to advise in making necessary arrangements for people whose homes had become uninhabitable.

Residents of the Grand Valley district had a bad time in that great cakes of ice, swept down by the flood, were deposited on traffic arteries making the mopping-up operation more difficult.

At St. Marys, one of the first centres in the Province to report flooding, a bridge in the middle of town was completely damaged and several houses in the lower end had to be evacuated.

Down in the little Hamlet of Wardsville, on Number Two Highway, 35 miles west of London, a community kitchen was set up to serve the people who, from the higher ground, watched the flood recede as the Thames returned to its normal level. John Bilton, a resident of that area, in comparing the damage with that done during the great flood of 1937, stated that it was even worse but that they had anticipated it coming and had taken the precaution of having some extra food and water on hand.

Firemen at Brantford just forgot about working hours when they set out on

punts to do some rescue work as the Grand river went on a wild rampage, moving everything moveable in its path. In the flooded areas of that city, the river created a lake covering several square miles of territory. Spreading far from its normal channels, the flood waters crossed Birkett's Lane and Mohawk Street, and went as far as a new project of emergency housing. Some of the residents

who remained at their island homes used boats to get out and obtain groceries or other necessities. Among the many people removed by the firemen, was a woman who was seriously ill and whose life was undoubtedly saved by their prompt action.

Dogs and cats were also well looked after as their owners made sure that they

(Continued on page 32)

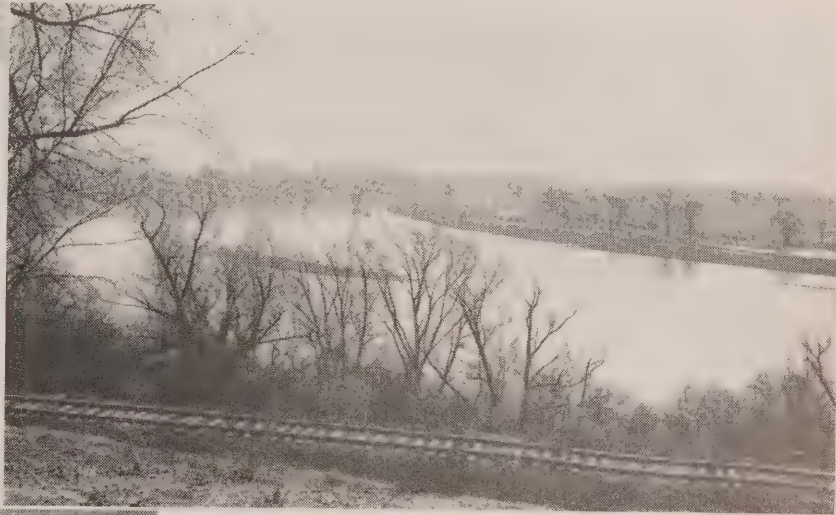


WEARING HIP-BOOTS, Alvin Crundwell of the Dresden Hydro-Electric Commission staff feels his way through the water and up the steps to the landing in front of the office door. Here, on a box, a gas pump fights a losing battle in keeping the water out of the building. Power at Dresden was cut off as a safety measure.



EVEN IF you were coming down the street in a boat it would not be necessary to stop at this railway crossing even if you did know approximately where the tracks were. The gas station looks as if it would be closed for business for a couple of days also. But the people of Dresden are making a great recovery from the flood. Machinery is getting overhauled and houses aired and dried out. Down at Chatham, a corn-drier, owned by a private company was made available for drying out rugs and furniture. One theatre moved all its chairs over to this dryer and after a few hours all was well.

AT CAINSVILLE, just outside of Brantford, the Grand River was making islands out of hills, turning fields into lakes, as shown here. A couple of railroad ties lashed together made a good raft and even a wagon-box, which had somehow got detached from its wheels, was being used as a punt even though there were about six inches of water inside it. Hydro in this area was unaffected by the rising waters.



PAT JAMIESON who lives on Ridout Street South in London, got off her "bike" to look over the sandbags which were piled up around the garage doors of the London Public Utilities building. Sandbags were used in many places throughout the Province and while they do not keep water out of buildings entirely, they prevent too much from coming in and give the pumps a chance to work.



GERALD M. CLAXTON (lower left), who is a waterworks operator for the London Public Utilities Commission, points to his tennis club which was about 100 yards away and shows J. A. Rossiter, who is the purchasing agent for the London and Port Stanley Railway, and the local P.U.C., the water mark during the floods. Just under the bridge you may be able to discern a foot scale which recorded the water level. It shows that the water came within two feet from the top of the span.

THE CRY (lower right) of the beverage operators these days is that there is a shortage of bottles. In London, one big manufacturer happened to have his containers stored in a place where the flood water picked them up and floated them around the countryside. Here are some of the men from the London Public Utilities Commission raking them up off the driveway so that it will be safe to drive cars and trucks without having the tires damaged.





DR. R.W.I. URQUHART MEDICAL DIRECTOR

POISON IVY

One is always glad to see the first green shoots of new growth appear in the Spring. At last the long winter is over and Mother Earth in truly feminine fashion is about to bedeck herself in fresh bright shades of green. Of the thousands of species of plants she uses for this purpose, only a few are especially harmful to man. Some are poisonous to touch; others only when eaten. It is with those that are poisonous to touch that I wish to deal in this article.

There are about 120 plants in North America that are poisonous to touch. These produce an inflammation in the skin which is described as a dermatitis. Only a few of these plants grow wild. The most common wild plant of this type in Ontario is Poison Ivy, or Poison Oak, as it is sometimes called. True Poison Oak is said to be found only in British Columbia. Poison Sumach, while equally poisonous is not as common and is said to be found in swampy areas at Turkey Point, Norfolk County and in the Bruce Peninsula.

While the majority of people are sensitive to poison ivy, a few people are sensitive to a number of other plants, both wild and cultivated. For example, the beautiful Lady Slipper and some members of the spurge family, "snow on the mountain" and "grave yard moss" will in these individuals produce a severe irritation. Rarely, people are sensitive to tomato, horseradish, parsnip or spinach leaves and have to avoid them in the garden. The perennial larkspur and primrose more commonly affect certain sensitive individuals.

All parts of the poison ivy plant are dangerous. The roots, stems, leaves and berries all contain the oily substance that produces the skin irritations. New shoots and leaves in which the sap is abundant are the most dangerous. Even dried specimens contain the oil; and smoke from the burning plants has been known to cause serious cases of poisoning. While poisoning is usually caused by coming in direct contact with a part of the plant,

some cases result from handling contaminated clothes or shoes or tools. Pets such as dogs or cats may carry the poison on their fur if they have been in patches of poison ivy.

Do Not Touch

It is important therefore that one avoid touching poison ivy. One must learn to recognize it. The leaves of the plant are



always arranged three on a stem. The surface of the leaf is smooth and glossy. The edges are irregularly notched.

In Summer small whitish flowers may be found in clusters under the leaves. Later these flowers develop into small round white berries about the size of peas. These may be quite inconspicuous and often are absent. No other plant has three leaves and white berries. Remember! three leaves, three words: DO NOT TOUCH.

Many of our people have work to do in areas in which poison ivy plants are abundant. It may be next to impossible to avoid contact with parts of the plant. Personal prevention is, therefore, of the utmost importance. Gloves should be worn to protect the hands, and sleeves should be kept down over the arms. High boots or ankle boots with socks pulled up over the trousers are a help. Often a preventative lotion can be used which, when smeared over the hands, arms, ankles and legs, forms a protective coating which is of some value.

Where contact with poison ivy is suspected, the most important and effective means of prevention is the thorough washing of the hands, arms and in some cases the ankles, with a thick lather of laundry soap and water *before the poison has had time to affect the skin*. This should be done several times, not only at the end of the working day, but also at the lunch hour and at intervals in between, if exposure warrants it.

If in spite of these preventative measures, poisoning occurs—treat it promptly. The first signs of irritation develop in three to six hours after exposure. It begins as a slight itching followed by redness of the affected skin area. At this stage, further washing with soap and water and when dry the repeated application of the poison ivy lotion in the First Aid Kit may halt the process. It may however, go on to the formation of blisters. Remember that the fluid in these blisters itself contains some of the poison and scratching by breaking the blister may spread the irritation. Continue with washing and the poison ivy lotion.

With late or insufficient treatment, the condition may spread over larger areas. Disease germs may get in and produce secondary infection. Medical help should be obtained in all but minor cases. There is no specific cure for the condition. The physician relies on the removal of the poison by alcohol or ether and then applies compresses thoroughly wet with one solution or another, in order to allay the irritation. Common solutions used for this purpose are: Epsom Salts as strong as can be made with cold water; alomine lotion obtainable at any drug store to which, prescription phenol or lead acetate in small amounts are sometimes added; or one-half a domeboro tablet crushed and dissolved in a cup of water. The use of ivy extract injections are advocated by some but by no means have received universal approval. The best cure is prevention. Prevention depends on recognition. Remember! Three leaves, three words DO NOT TOUCH.



ADEQUATE WIRING TRAINING SCHOOLS

MANY MUNICIPAL Hydro men have been attending the adequate wiring training schools sponsored by the Electric Service League of Ontario in co-operation with Hydro municipalities and The Hydro-Electric Power Commission of Ontario. The groups shown above—at the Windsor School (left) and the London School (right)—were being addressed by George W. Austin, manager of the League, when these photographs were taken.

NORMAN FRANKS (above), Toronto district Manager of the Canadian General Electric Company Limited, addresses the London group on "Possibilities of the Ontario Red Seal Programme."

THIS GROUP (right), taken at Windsor shows George W. Austin, manager of the League, (centre) and four electrical contractors from the London area.



FROM LEFT to right: A. McTavish, Electric Service League of Ontario, George W. Austin, manager of the League, Fred Rhoads, merchandise manager, Windsor Utilities Commission, and Bill Loudon, the Electric Service League.

#his and #hat

By The Editor

ARNOLD BENNETT passed along some "sound" advice when he emphasized the importance of controlling one's voice. He contends that ninety per cent of all daily friction is caused by the tone of the voice. When one man speaks to another, the latter's reaction is to two things—looks and the tone of voice. Tone can be utterly negative to the words.

This question is one with which many people have been confronted from time to time when, unknowingly, they have offended their friends by the tone of voice in which they spoke. Voice control—or rather lack of it—can detract from one's social prestige and retard one's progress in business life. An employee who antagonizes his Company's clients by the way in which he speaks is not an asset to that company. Voice control goes hand in hand with a pleasant mien in the field of public relations.

Bennett has contended that reaction of a listener is usually far more to the tone, which reflects attitude, than to the words themselves. If your tone is right, you may stutter, stammer, express yourself awkwardly—but the listener will "get you" in a favourable way. Here's the way Bennett put it:

"As tone is the expression of attitude, it is, of course, caused by attitude. The frictional tone is due chiefly to that general attitude of blame which I condemn as being absurd and unjustifiable. By constant, watchful discipline, we gradually lose this silly attitude of blame, so the tone will, of itself, gradually change. It is a curious thing that an agreeable tone, artificially and deliberately adopted, will influence the mental attitude almost as much as the mental attitude will influence the tone."

It might be well if we gave this doctrine of not blaming a good trial. We should try to control ourselves in such a way that when someone makes a complaint out of nothing, we will not blame him—or her—but try to understand why the complaint was made.

We have met many people who lack

voice control in two ways—in their tone and in not knowing when to stop speaking. A speech should be like a woman's dress: long enough to cover the subject yet short enough to make it interesting.

* * *

IN THE foregoing piece we made a reference to public relations and that reminds us of two incidents which occurred recently that revealed very poor public relations on the part of the managements of two leading Canadian hotels. These incidents were brought to our attention by one of the Commission's well-known engineers—a gentleman who is known for his even, kindly and courteous disposition and for a quiet sense of humour. The day we were talking to him he had all but lost his sense of humour and his even disposition. And there was little wonder. Here's the story: Two of his very good friends—a young couple—had completed arrangements for their wedding and a week before the nuptials, they reserved a room at a big hotel and received official confirmation of their reservation. The wedding and reception went off according to schedule after which the couple, with their baggage, arrived at the hotel where the room had been reserved. But there was no room. The couple waited around for two hours in the hope that the management would make good the promise represented by the official confirmation but the clerk stated that there was no accommodation. The plight and embarrassment of the newlyweds can readily be imagined. Finally, they were rescued by some friends who turned over an apartment for their use until other arrangements could be made.

As a result of this incident, quite a number of people now entertain private meditations concerning the service provided at this hotel which is very well known. Perhaps, these meditations are not now so private.

This same Hydro engineer, who told us about the embarrassing experience of his two young friends, also mentioned an experience of his own at another well-

known hotel where two rooms had been reserved a year in advance. When he went to get the rooms he was informed that they were occupied and it was only two hours before an important event was to take place that he could get substitute rooms on another floor with the result that certain guests did not know where to go and there was confusion and embarrassment on every hand.

It is unfortunate—in fact it's poor public relations on the part of the managements of the hotels concerned—to permit such incidents to occur. Most of Canada's leading hotels do provide excellent and courteous service and they do reserve rooms when they say they will. However, faux pas such as these should not occur.

* * *

HERE'S INTERESTING news for Hydro and other fishermen. Mary Ainslie of the Ontario Department of Travel and Publicity tells us that the open season for Black Bass will be from July 1 until October 15 with the following exception: on River St. Clair, Lake St. Clair, Detroit River, Lake Erie and the Niagara River from Lake Erie to Niagara Falls the season runs from June 25 to December 15. Catch limit is six per day; minimum length ten inches.

Then those who are waiting to get after the Maskinonge can make a start on July 1 and keep on going until October 1. The exception is the same as in the case of the Black Bass. It should also be noted that north and west of and including the French and Mattawa Rivers and Lake Nipissing the Maskinonge season runs from June 20 until October 1. The catch is two per day; fourteen per season; minimum length thirty inches.

Coming to the Trout family—Speckled, Brown, Rainbow, Kamloops and Aurora Trout—the season opened on May 1 and will continue until September 15. Five per day and a minimum length of seven inches are the limitations so far as Rainbow, Brown, Kamloops and Aurora Trout are concerned.



Hydro

HOME FORUM

by Edithemmu Muir

HOME ECONOMIST

To the people born in May goes the distinction of wearing the most precious of the gems as their birthstone—the emerald. This deep green transparent variety of the mineral Beryl is found in its finest quality in Columbia and the Ural Mountains in Russia. For spring, no precious stone is more appropriate than the emerald. Its colour is closely attuned to nature, for nature clothes herself with green as she awakens from the long winter. Rejuvenation, hope and joyousness are claimed for the person who can wear the May birthstone—and I'm happy, I can.

Birds at this time of year go right ahead building homes. They do not have to be taught how to build or where to place their homes. Young birds follow the design adopted by their parents or grandparents, although they have never witnessed the actual construction, nor attended any courses on nest-architecture. Take for instance, a Baltimore Oriole's nest as it swings, basket-like from the outer limb of a big elm, and you may well marvel at the intricate structure and at the way it is fastened to the supporting limb.

Why don't you use those small coffee cups you've been collecting? They're more than decorations, or can be. Also it's fun to use them. Carry them to the living room on a tray, after dinner, along with a pot of hot strong coffee. After dinner coffee is usually served without cream, but with or without sugar.

Salisbury steak, my friends, is just hamburger dressed up. Mix 1 pound of ground beef with 1 beaten egg, 1 teaspoon salt, ½ teaspoon pepper and 1 tablespoon grated onion. Turn this mixture into a shallow baking pan and shape into a slab being sure to keep it to a thickness of about 1 inch. Cook in a hot electric oven of 400 degrees for 10 minutes, then reduce temperature to 325 degrees for another 10 minutes.

How long is it since you've served parsnips? Now don't sniff—parsnips are

RHUBARB STRUDEL

4 cups corn flakes
2½ cups diced rhubarb
1 cup sugar
½ tsp. grated orange rind
2 tablespoons orange juice
3 tablespoons butter
Put layer of corn flakes in buttered casserole. Add a layer of rhubarb, part of sugar and half the grated orange rind. Add another layer of corn flakes and rhubarb, remaining sugar, orange rind and juice. Cover with corn flakes, dot with butter and sprinkle lightly with sugar. Cover casserole and bake in an electric oven (375 degs.) about 35 minutes. Serve warm or cold with cream. Yield—6 servings.

ASPARAGUS EGG CASSEROLE

2 tbsps. baking fat
3 tbsps. flour
½ tsp. salt
pepper
1½ cups milk
3 hard-cooked eggs
2½ cups cooked asparagus
bread crumbs
Melt fat in saucepan, blend in flour and seasoning. Gradually stir in the milk to make cream sauce.

Place a layer of cooked asparagus in bottom of greased casserole, pour over this part of cream sauce, add a layer of sliced eggs and repeat until casserole is full. Top with bread crumbs. Heat in electric oven of 350 degs. for 20 mins. Five servings.

a very tasty vegetable and can be prepared so that you and your family will enjoy them, and they are not too expensive either. Try them this way. Parboil parsnips, skin and slice lengthwise. Put in greased baking dish and dot on butter. Sprinkle ½ tsp. mustard and 3 tbsps. brown sugar over them. Bake in moderate oven for 30 minutes.

Another parsnippy suggestion is this: Cook the vegetable, mash and combine with mashed potatoes, chopped cooked onion, salt and pepper, and top with

browned mushrooms. A genuine supper dish accompanied with fried fresh trout.

Many families prefer their fish fried to any other method of cooking, but sometimes complain of its indigestibility. Remember that fish is an easily digested food but if improperly fried may be less digestible. The Spencer method of cooking dressed fillets is: soak pieces in salted milk 3 minutes, then cover with sifted crumbs. Bake in electric oven of 450 degrees for 12 to 15 minutes.

Secret of golden brown appearance of above fish dish lies in the preparation of crumbs which can be made up anytime beforehand. Place dry bread, crusts and all, in the oven when it is moderately hot after a baking operation, and leave till crisp and golden. Put through meat chopper and store in a glass jar with a cover of cotton.

Not only the appearance of handloomed fabrics but the designing talent that produced them have been borrowed for some of the new wallpaper designs. Liebs, a fabric designer, has produced such patterns as yarn stripe, fringe cloth, bamboo, basket stripe, fabric stripe and lustre cloth.

Wallpaper for floors! Well a decorator did that for the clothes closet floors. Using washable bathroom paper for ceiling, walls, and floor, the closets were economically decorated. They had a perpetual clean look too.

One article often forgotten in the housecleaning "spree" is the cushion. Each cushion needs a few days' holiday—send to the cleaners or air on the clothes line in the sunshine. The ones scheduled to go to the cottage or to the porch may be covered with good quality plastic material this year.

An occasional table makes a useful gift. Wedding and anniversary presents are easily solved if you look around the furniture department. Small tables may be traditional, modern or provincial in design. Each has its own accepted use and its own style and purpose.

BRANTFORD

(Continued from page 13)

to be the largest makers of farm implements in the British Empire, is the largest Hydro consumer in Brantford, taking over 3,800 horsepower.

Some of the other users of electrical energy include: Cockshutt Plow Company Limited; Waterous Limited; Barber-Ellis of Canada Limited; Brantford Coach and Body Company Limited; Brant Engineering and Tool Company Limited; Brantford Washing Machine Company Limited; Canada Packers Limited; Canadian Car and Foundry Company Limited; Harding Carpets Limited; Kitchen Overall and Shirt Company Limited, and many others.

Invention Of Telephone

Brantford's reputation as "The Telephone City" was established when, at Tutela Heights, Alexander Graham Bell prepared the specifications for the first telephone in the summer of 1874. It was not until two years later, however, on August 10, 1876, that actual experiments, made on the telegraph line between Brantford and Paris, had significant results. Here for the first time a message was transmitted by telephone over a telegraph line. The receiver of the telephone was in Paris, the transmitter in Brantford and the battery which supplied the power was in Toronto. The young inventor had arranged to have persons sing, talk or recite into the transmitting instrument in Brantford, while he listened at the receiver at Paris. After observing the effects, he made several immediate changes which resulted in loud and clear articulation being heard. And so the fact was established that for the first time the telephone was an actuality and not merely a scientific experiment.

The Bell homestead on Tutela Heights has been taken over by the city of Brantford and retained as a museum. A Bell memorial, commemorating this revolutionary invention, is located in the Graham Bell Gardens in the centre of the city. Dr. Bell himself was present at the unveiling of the memorial on October 24, 1917.

Many Fine Homes

Frequently described as the city of trees, this friendly community is noted for its many fine homes and well-kept lawns and gardens. And it is said that between sixty and seventy per cent of these houses are the property of the people who live in them. There are also many fine buildings, churches, hospitals and schools including the Ontario School for the Blind. This is a provincial institution for the education and training of blind children. There is also the Mohawk Institute, which is a school for the Indian boys and girls from the nearby reser-

vation.

Ample park lands, to the extent of over 200 acres, are conveniently located around the city for those who enjoy outdoor sports. And for those who participate in the "Royal and Ancient," there are three golf courses which are easily accessible. One of these is a municipally-owned and operated course.

Among the outstanding Canadians who claimed this district as their birthplace are: the late Sir Henry Cockshutt, formerly Lieutenant-Governor of Ontario; the late Hon. A. S. Hardy, who for many years was the legislative representative for South Brant; Pauline Johnson, well known Canadian poet, and many others.

GET BACK INTO NORMAL SWIM FOLLOWING FLOOD

(Continued from page 26)

were fed and removed to safety if necessary. Sixteen families in the Wingham area had to be removed to dry land by boat from the inundated section of the lower part of the town, when the Maitland river broke through its dams and protecting banks. Basements at Tara were all under water and the village fire engine was enlisted to pump out individual cellars.

Washouts on many culverts reduced automotive traffic to a "snail's pace" and the highways are still sprinkled with the "bump" warnings where the water has washed out roadbeds.

Down at Thamesford, both banks of the river were in danger of being washed out but sandbags placed in piles against a 35-year old dam took most of the buffeting from the ice and water.

The Public Utilities station in London on the banks of the Thames just missed taking a beating from the flood but the surrounding grounds and tennis courts will have to get a complete overhaul. High water washed away many cases of empty bottles from a brewery. The bottles in question were broken and deposited on the grounds around the Hydro building. Sandbags were again used in this instance to keep the water from pouring in the garage doors and doing any damage to the interior.

At the time of writing, the flood situation appears to be under control with activities getting back to the normal "swim."

HEADS HYDRO BOWLERS

In the thirtieth annual election of officers of the Hydro Men's Bowling League, Henry R. Morris was elected president with W. A. Hall, vice-president; E. A. Sudden, treasurer, and H. D. Chapman, secretary. Prizes for the year's bowling were presented by past-president F. B. Shand.

PUPILS SHOW ENTERPRISE

(Continued from page 20)

acted as a resistor and produced heat. Another graphic drawing showed the several layers of different materials that go to make up the protective covering for an appliance cord. In this way, they became conversant with the limitations of such a cord and how to use it so that it would last a long time.

Read Electric Meters

And that wasn't all. Miss Jackson had suggested that her pupils might find it easier to read their electric meters if they studied it at school. This prompted one project which was drawn to represent a train of dials with moveable hand that had been patterned after a real meter. They had learned how to read the latter and how to compute an electric bill. For this further step, an immense copy of the regular invoice issued by the Hamilton Hydro-Electric Commission was drawn to scale. Then, when the dials on the meter were set, a reading was taken and the total of the make-believe bill was calculated by the pupils.

Designing a project, which conveyed an important message to all boys and girls, Billy H. Smith, John Murray and Mary Etherington had made up a poster that directed attention to a series of safety rules. It included such warnings as don't fly kites on city streets; don't touch fallen wires and don't leave an electric iron plugged in after you have finished with it.

Many fine tributes were paid to these Strathcona School students for their excellent projects.



"I had to quit my job because of illness—the boss got sick of me!"

HYDRO AT WORK

Keeping Food Fresh

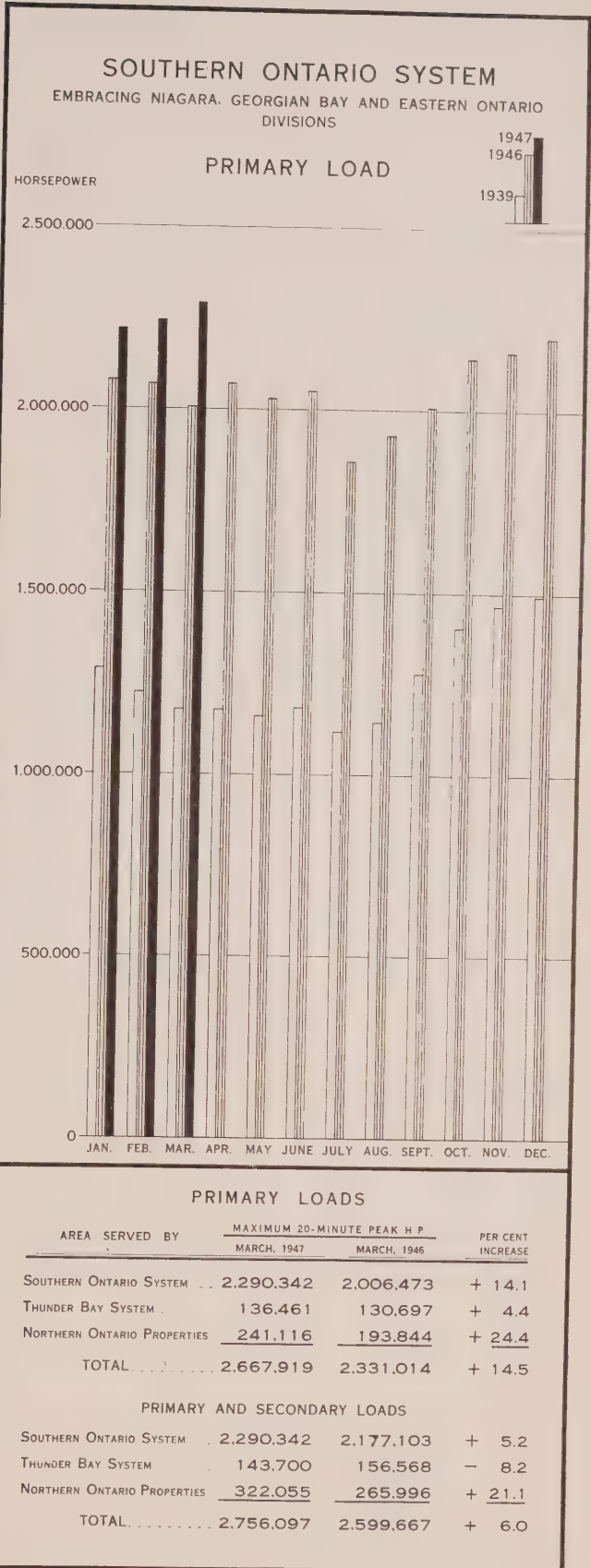


Queen Isabella of Spain didn't own an electric refrigerator. It was quite embarrassing. As a result, around the year 1492, Chris Columbus spent much of his time aboard his galleon seeking a short route to India where spice and other food preservatives could be obtained for Her Majesty and her loyal subjects.

Nowadays, however, the availability of electric refrigerators and quick freezing units has reduced the question of food preservation to a matter of accepted and routine practice in homes, plants and stores.

The illustration, above, shows a type of food display counter or cabinet used by modern stores that handle perishable goods. The process of refrigeration, simply expressed, involves the removal of heat from within the insulated cabinet. This is accomplished by circulating a liquid refrigerant which evaporates within the super-freezer and which in becoming a gas absorbs heat. The driving force back of this circulation is an electric motor which operates a compressor. This principle is one that applies to both the show-window cabinet and the small apartment-sized refrigerator.

Automatic operation is obtained by use of an electric switch controlled by a thermostat which starts and stops the motor and thus maintains a fairly constant temperature.





HYDRO *Lightens* The Way

● In the operating room, under a shadowless flood of light, surgeons perform miracles with the help of Hydro. Sensitive electric cutting instruments are used in many delicate operations. Elsewhere, it powers the X-ray and therapy machines. It protects nurseries from air-borne germ infection. It conditions the air, runs the elevators, pumps the water. And these are but a few of the many ways in which electricity serves.

Hospitals provide an outstanding example of the benefits derived from 24-hour Hydro service. Indeed, without the ever-present aid of electricity, there could be no modern hospital. With its help . . . surgery and medicine discover new ways and means to fight and control disease and illness . . . industry creates new and better products for the progress and welfare of mankind.

Just as the doctor relies on electricity to aid him in healing the sick, so we, in our everyday life depend on it to assist in performing many of our daily tasks. No matter where we live . . . be it city or farm . . . we can look forward to even better living in the days to come, by planning now to enjoy more of the benefits that electricity can bring.

THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

HYDRO News





"Anyway, it keeps him from breaking insulators!"

Father is getting wiser. Sonny used to take pot shots at insulators on Hydro poles. Then Dad discovered he could buy a whole set of dinner plates for less than the cost of the damage resulting from even one broken insulator. Of course, you wouldn't be shooting at your dinner plates; but, being a citizen of Ontario and one of the owners of Hydro, it is just as much a loss of your property when Hydro insulators are broken.

It is not that the insulator is so costly in itself, but one broken insulator can cut the service on a line. That line may be carrying energy to the electric range at home, or the operating room at the hospital, or to the factory where Eddy is trying to build up a pay cheque by piece work. Someone throws a stone or shoots a rifle. An insulator shatters with fascinating proof of marksmanship. This damage very often causes a pole to take fire, allowing live wires to drop to the ground, endangering human and animal life.

In any case, whoever is depending on that line for electric service is held up until repairs can be made. That can cost somebody plenty. A crew of men and a truck may have to travel miles to locate and replace the broken insulator, resulting in a great loss of time and money. When you stop to think about it, it's hardly worth it, is it?

You, as a citizen of Ontario, can do a great deal to help to maintain the very low Hydro rates which have now been reached. Your Commission appeals to you to use your influence at every opportunity to prevent the deliberate or careless destruction of Hydro property.



THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

HYDRO NEWS

READERS' OPINION POLL

IN MARKING its fifth anniversary this month Hydro News invites the co-operation of its readers in recording their expressions of opinion on the various new stories, regular features and illustrations which have been appearing in the magazine. These expressions of opinion will be helpful in formulating future plans.

TO INDICATE the features which are of greatest interest to you, use numerals to show the interest sequence. For example, the feature you find most interesting should have the figure 1 after it, with the second ranking feature having the figure 2 and so on. If, in your mind, there are two or more features of equal interest, use the same figure after each of them. For example, if the stories on Hydro developments and historical stories ranked **SECOND EQUAL** in your interest rating then the figure 2 would appear after each of these features.

YOU ARE invited to use the back of this page on which to make any general comments you may wish on stories, regular features, photographs, general appearance or any other observations on Hydro News. Constructive suggestions will be welcomed.

WHILE WE would be glad to have the name and address of the reader completing this form, that information is not absolutely necessary. However, the following information on the reader should be included:

MALE..... FEMALE.....
 PROFESSION
 HOBBY

AFTER COMPLETING this form, please return it as quickly as possible to: The Editor, Hydro News, H.E.P.C., 620 University Avenue, Toronto, Ontario.

THANKING YOU, in anticipation, for your co-operation,

THE EDITOR,
Hydro News.

INTEREST RATING

STORIES

Commission Departments
 Conventions, Conferences
 Historical
 Hydro Colonies
 Hydro Developments
 Hydro In The Home
 Hydro In The Hospital
 Hydro Lighting
 Hydro Linemen
 Hydro Municipalities
 Hydro On The Farm
 Storms, Current News, etc.
 Uses of Hydro In Industry

INTEREST RATING

PHOTOGRAPHS

Cartoons
 Commission Personnel
 Current News (Storms, etc.)
 Factories
 Farm
 Front Cover
 Home
 Hydro Colonies
 Hydro Developments
 Municipal Personnel
 Picture of the Month

REGULAR FEATURES

INTEREST RATING

Around Hydro Circuit
 Dr. Urquhart's Column
 Hydro At Work
 Hydro Home Forum
 Lighter Lines
 Page Three
 This and That

QUESTIONS

1. Would you like to see a two-page technical section included in Hydro News?

YES NO State, briefly, reasons for answer given.

2. Would you like to see any other features included in Hydro News? If so, state features and reasons why you think they should be added.

USE BACK OF FORM FOR ANSWERS



THE HYDRO - ELECTRIC POWER COMMISSION OF ONTARIO

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THE FRONT COVER



A PICTURE which can in-
spire one to break into song
must be regarded as noteworthy in
more ways than one. Such an
incident occurred recently when
photographer Burt Helling of the
Commission staff entered the edi-
tor's office with a song on his lips
and the picture used for this
month's front cover in his hand.
His baritone rendition of "Down
By The Old Mill Stream," imme-
diately suggested the title "Old
Mill Stream." He got this shot
on the Mississippi river—in On-
tario—near Packenham to be exact.
He took it from what is said to be
the only five-span stone bridge in
Canada. To the right is a small
Hydro substation and at the top
may be seen Hydro rural distribu-
tion lines.

Volume 34

June, 1947

Number 6

CONTENTS

	Page
A Summer Day	2
Page Three	3
'Mid Hydro Sorceries And Dragon's Blood	4
Wanton Destruction Of Street Lights	10
Around The Hydro Circuit	12
Insect Pests	13
Safety League Uses Hydro Advertisement	14
Power And Plywood	15
St. Thomas	19
Toronto Adequate Wiring School	22
Stewartville	24
Hydro Home Forum	26
This And That	27
Lighter Lines	28
Presentation Made To Retiring Operator	30
Hydro At Work	31
Monthly Load Summary	31
Municipal Loads	32





Picture of the Month

WHAT IS so rare as a day in June?"—photographed by
the late J. H. Mackay, formerly of the Commission staff,
these two children typify a carefree summer day.

SUMMER MEMORIES

*Tell you what I like best—
'Long about knee-deep in June,
'Bout the time strawberries melt
On the vine,—some afternoon
Like to jes' get out and rest
And not work at nothin' else!*

James Whitcomb Riley

ANYONE who spent their childhood summers in a small Ontario town some twenty-five or thirty years ago has a series of memories of the sort that are good to take out on cold winter nights to look at and linger over. They are of a life that has disappeared just as surely as any remote period in history that we read about. Nowadays the radio, the motor car and the movies have not only standardized our life but have accelerated its tempo so that everyone must be constantly and restlessly on the move before they feel they are enjoying themselves.

It would seem to be impossible ever to recapture the deep peace—the drowsy, hot stillness of those long summer days of childhood. Time itself seemed to stand still as one long hot day followed another with no more exciting activity than to wander through pastures waist-high in buttercups and daisies or to lie flat on the earth thoughtfully chewing grass blades, with the drone of bees in our ears and the dancing vibrations around us that the hot sun makes when it meets the moisture of the tall grasses. The grasses themselves were vibrant with minute, bustling life, each making its own small, shrill summer noise. We sometimes wonder vaguely if it is age that has dimmed the sun for us in recent years or if there really has been a climatic change taking place.

After supper we children sat on the verandah steps and watched the sun slant down over the neat lawns and watched the moon come up the other side of the garden. And when the dew came down on the cut grass and the English honeysuckle, the smell was wonderfully sweet and strong and the night silence was broken only by the cricket chorus and the occasional whine of a night hawk. Then it was bed time, and drunk with sun and the sweet smells of the night we had to be literally carried off.

With the daily press full of the sadness of the aftermath of war, we sometimes think that if we could have one wish granted it would be that all the thousands, yes millions of children, made hungry and insecure through the folly of their elders, be given even just one of the sun-drenched, carefree summers that we used to know.

WHERE HONOUR IS DUE

WHEN and where was the first long distance transmission of electricity carried out?

This is a question that comes up frequently whenever electrical engineers gather at anniversary celebrations. As it seems to be regarded somehow as affecting national and regional prestige, it is not surprising that there should be several claims to the honour of being first in the field.

Naturally, Hydro News, is prepared to back Niagara against all comers if the facts justify such backing. When, however, the statement appeared in a recent issue of an American technical publication that the world's first long distance transmission of power was from Niagara Falls to Buffalo on November 15, 1896, it was thought advisable to look up the records before passing on the good word.

Glancing first over the American scene: reports of the International Electrical Congress held in St. Louis in 1904 would indicate that the first long distance transmission in the United States was carried out in San Miguel County, California, in the winter of 1890. Alternating power, apparently single phase, was transmitted successfully over a distance of several miles to a mine near the summit of a mountain from a station erected in the river valley below.

Closely paralleling this achievement in point of time—and apparently antedating it as far as the beginning of construction was concerned—was an undertaking of far greater importance carried out in England. This was the building of an underground transmission line from a central station at Deptford to London. This project was carried out under direction of the famous electrical engineer and inventor, S. Z. de Ferranti. Regular transmission of current began on February 16, 1891, and the service was continuous until 1933 when a remodelling of London's electrical services on a grid system was undertaken.

Then, over in pre-Nazi Germany in 1891, a long distance transmission demonstration was given at the Frankfort exhibition when power was brought from Lauffen, a distance of approximately 100 miles.

Niagara has many distinctions, but in the light of these facts it cannot claim the laurel wreath for being the source of the first long-distance power transmission.

Mid HYDRO SORCERIES and DRAGON'S BLOOD

By H. M. Blake,
Hydro News

Outstanding among the process crafts which must now be reckoned as indispensable industries is photo-engraving. Almost everything of a pictorial description which we see reproduced in our current newspapers, magazines and books and in the varied and colourful advertising of our day has passed through the hands of the craftsmen and artisans it employs and has been prepared by them for the press. Electricity has supplanted the atmosphere of medieval enchantment which surrounded the old-time engravers and etchers working in the broken light from mullioned windows or in the goblin glow of spluttering candles, but it has provided a new magic of its own. And under the quickening spell of electric power and electrical illumination important processes have been speeded up and new methods introduced, with incalculable saving of labour and time.

A visit to a photo-engraving plant would be incomplete without a peep into one of the well-equipped modern studios where the original photographs for magazine covers and for other artistic layouts are made. We are lucky in our time and place for we find a beautiful girl posed against a background of cloud and sky. There is a concentration of 5,950 watts of Hydro lighting on the scene. The photographer has already placed his spot and flood lights in the required positions, and, as we enter, he is making the final adjustments to his boom light. This is a flexible lamp attached to the long arm of a standard which towers nearly to the ceiling of the studio.

Once he has moved the standard into an approximate position, he can play the lamp as a fisherman plays his line, back and forward and up and down, just as he desires.

Fifty Million Lumens!

The photographer we chance to have called upon has also an electrical device—and this a very startling one—for taking rapid-action photographs with such a brilliancy of illumination that the clearest possible photograph of the disintegration of a light-bulb under a hammer stroke can be taken at 1-5,000th. of a second. This "lightning" photography is effected by means of a gaseous type

of lamp known as a "strobolite" tube. It is attached to a transformer and condenser arrangement of his own and is touched off by a camera connection. His apparatus takes in Hydro's alternating current at 110 or 120 volts, steps it up to 2,500 volts and changes it to direct current. When touched off by the camera, the discharge crosses the terminals of the strobolite tube, ionizes the gas and breaks down resistance. A momentary impulse of approximately 20,000 volts is set up and produces a flash of 50,000,000 lumens. This is equivalent to the intensity of light which would be furnished by a concentration of more than 70,000 60-watt Hydro bulbs!

We stop to see this equipment in action. Then cautiously hopping the dormant cables, we make our way to the door. The photographer has a word of warning for us as we leave. The apparatus he has shown us was not designed to be played about with by amateurs. As if we had any ideas that way!

A cup of coffee en route to sustain morale, and we are in the process studio of a photo-engraving plant.

As we enter a man comes forward to greet us. His face is a mottled purple. For a moment we fear he may be enraged at our intrusion—these photo-engravers, so we have heard, are a rather exclusive brotherhood, jealously guarding the secrets of their craft, many of which have come down to them through the centuries. But he is not angry in the least. We soon discover that he looks just like we do under the mercury vapour lamps which provide the lighting for the cameras.

"Process" Photography

Here in the studio are two modern process cameras. They are built into the wall so that their lenses face the studio and their backs the developing room. The mercury vapour lamps, beside giving us the colour of irate turkey gobblers, are more usefully employed in throwing a high intensity lighting upon a board, fitted to the frame of the camera, on which is centred the subject to be photographed.

By means of these process cameras negatives are made of original photographs, such as the one of the beautiful girl we have just witnessed in the making, drawings, cartoons, paintings, art designs—anything required for reproduction. The negatives are necessary in order that engravings or "cuts" can be rapidly prepared for the presses and a multiplication

in printed form of the original work effected without delay.

The cameras in the plant we are visiting are called "chemco strip-film" cameras. As the name suggests, they use film instead of plates. Three sizes of film, covering practically all requirements, can be loaded at one time. The required roll is brought into position by simply pressing a lever at the side of the camera. Photographs are taken directly, without the use of a prism, and, after developing, the film is stripped in order to obtain the necessary reverse for the engraving from which the final print will be made.

Half-Tone Screens

Originals in line—where light and shade are obtained by varying thickness of the artist's strokes—are solidly drawn in black ink for line block reproduction and present no problem for the process photographer. On the other hand, photographs, wash drawings and other work for what is called half-tone engraving require special attention. In addition to careful retouching and chemical treatment of the subject, itself, in order to register the tonal values it is necessary to photograph through a screen composed of two thin sheets of plate glass on which diagonal black lines have been drawn with mathematical exactitude. The two plates are sealed together so that the diagonal lines criss-cross in a lattice-work pattern. Through the multitude of tiny windows thus formed the light passes to the photographic film which is pressed close up behind the screen. When the exposure has been made and the negative developed, the tones of the original are represented by dots of various sizes.

Half-tone screens are made in different rulings, varying from 50 lines to 200 lines to the inch for ordinary photo-engraving work. The screen used depends upon the character of the job—whether much or little detail is to be shown—and upon the grade of paper for which the "cuts" are to be made. Finer screens give finer gradations of tone but can be used with advantage only where good quality paper is in prospect. For newspaper work the coarser screens are usually employed. Coarse screen engravings provide bolder contrasts and less gradation and are better suited for clear printing on inferior paper.

Subjects must be photographed to the size ordered. With modern strip-film cameras the proper focus distance for

enlarging or reducing is determined by equating the size of the reproduction required to certain measurements shown on metal bars running the length of the camera's framework. When the precise distance—to the smallest fraction of an inch—has been calculated from comparison tables, the copyboard, together with the bellows of the camera, is moved back or forward to the mark. It remains for the photographer to decide upon the correct exposure. As this depends not only upon the constancy of the lighting but upon allowances for its absorption by the subject, nice timing is largely a matter of intuition based on long experience.

Photographic "Wizardry"

Standing beside one of the cameras, we have been watching the photographer go through the routine with a wash-drawing intended for half-tone reproduction. Finally, he flips a sheet of white cardboard in front of the copyboard, holds it there for a few seconds and then withdraws it, with a satisfied grin.

"That," he tells us, "should bring out the blacks."

We wonder what strange sorcery is at work until we suddenly realize that our friend is a jump ahead of us. His photography, for the moment, is finished. Already he is on his way to the dark room. On the negative, of course, the whites *will* be blacks. In this hustling, modern photo-engraving industry there is time only for forward thinking. Processes rapidly follow one another as the insistent clamour of the presses for cuts, electrotypes and stereos echoes the popular demand for more and more pictures.

Stripping Negatives

Responsive to the theme song, we hurry on.

When the negatives come out of the dark room, they are stripped and placed, reverse side up, on rectangular sheets of plate glass known as "flats," which must, of course, be absolutely clean. These "flats" are cut in a size large enough frequently to accommodate several negatives, thus saving time, labour and material. Letter work intended to form an integral part of the pictorial layout has been photographed separately, without using a screen, and, when stripped, is placed on a separate "flat". A photographic print is first made of the picture negative on a metal plate, and the lettering, the exact position of which has been carefully marked out, is then unprinted.

Engraving Plates

Zinc and copper plates are used almost exclusively in modern photo-engraving. Zinc is cheaper, and with an improvement in the fashioning of the plates and



ARTISTIC EFFECTS are produced by varied lighting. To the left of the camera are a 750-watt Klieg light and a 1,000-watt flood-light. The photographer's assistant is adjusting a 1,000-watt "boom" lamp, which can be moved in any direction without altering the position of the stand. On the right are a 2,000-watt Saltzman lamp and a 1,000-watt spot light. Including a lamp behind the camera, there is a concentration of 6,000 watts of Hydro lighting on the scene.



WHO WOULDN'T "fall" for a pretty girl in a setting of fleecy clouds and azure skies? The young lady is posing for a magazine cover design. When the photograph has been taken a colour transparency will be made from it. This will be sent on to the photo-engravers and will be used by them in the preparation of four-colour plates.



IN THE process studio of a photo-engraving plant, the photographer is attaching a drawing to the copyboard. Two mercury vapour lamps, fed by Hydro current, flank the camera and will throw a high-intensity light on the subject.

PICTURES MUST (lower) be photographed to the required size. The photographer has determined his adjustment and is now sliding the copyboard and bellows, which move in unison, up to the mark shown on the bar scale.



the engraving processes, there has been a tendency to employ it very largely for half-tones cuts as well as for line work. The best half-tones are, however, still made on copper.

Transfer Printing

The plates—which come in the same size as the “flats”—are first thoroughly cleaned and scoured and then coated with a solution sensitive to light. They are placed in an electrically controlled whirler which spreads the solution evenly over the surface, and are then dried by heat. The “flat” with the stripped negative and the zinc or copper plate are then placed in close contact in a printing frame which operates on the vacuum principle, and exposed to electric light, the exposure varying with the quality of the negative and the intensity of the light.

When the plate is removed from the printing frame, the coating, where it has not been hardened by the action of light, can be washed away, leaving those parts which have become hardened and insoluble through exposure to light adhering to the plate. The plate is then subjected to treatments, varying for line and half-tone, in order to prevent the acid used in etching from acting on those parts of the surface which are to be left unetched. The plates, corresponding in size to the glass “flats” as they come from the printing frame, are frequently sent on in the same dimension for etching. Where, however, they have received impressions from different negatives assembled on the “flats” and individual attention is required, it is often advisable to cut the plate and separate the subjects at once instead of later on.

Etching Processes

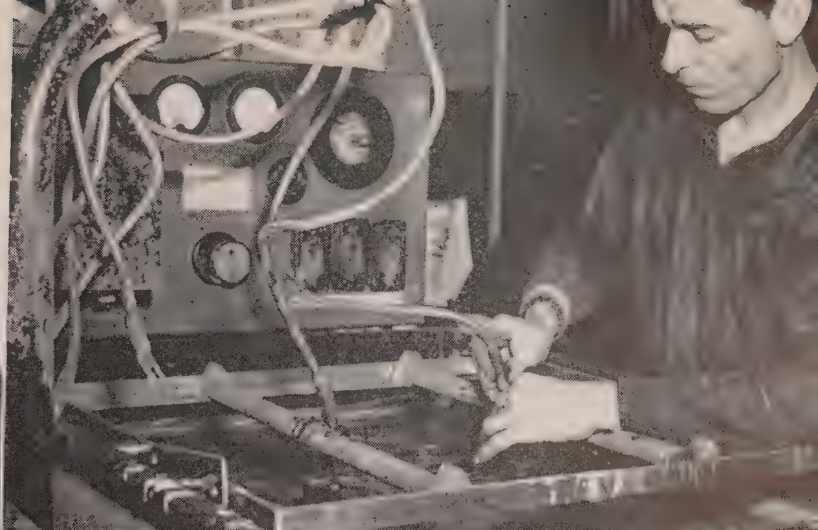
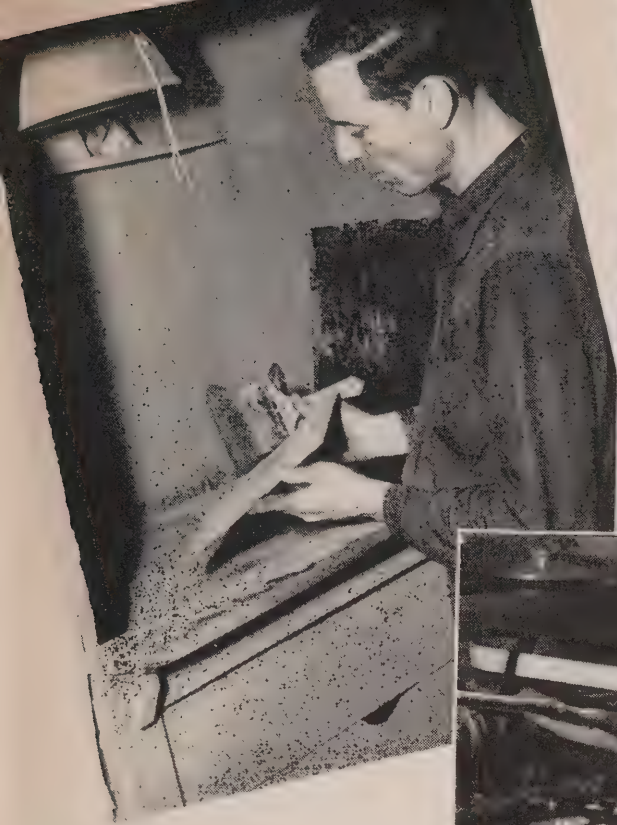
Etching is now usually carried on in electrically-controlled immersion or spray baths, the mordant being kept in continual motion.

In half-tone work etching is continued until the fine dots in the higher lights are as small as it is possible to etch them. When the etching of certain parts has reached a stage where it would be risky to proceed further, they are “staged” or stopped out with asphalt and varnish and the plate again immersed in the bath. A series of fine etching has then to be undertaken, entailing the stopping out with an acid-resisting varnish of those parts which have been etched to their fullest extent and applying a series of local etchings with a fine brush to put life in the engraving.

“Dragon’s Blood”

In line work, protection against “under-biting” of the lines is provided by a resinous powder known as “dragon’s blood.” This is dusted over the

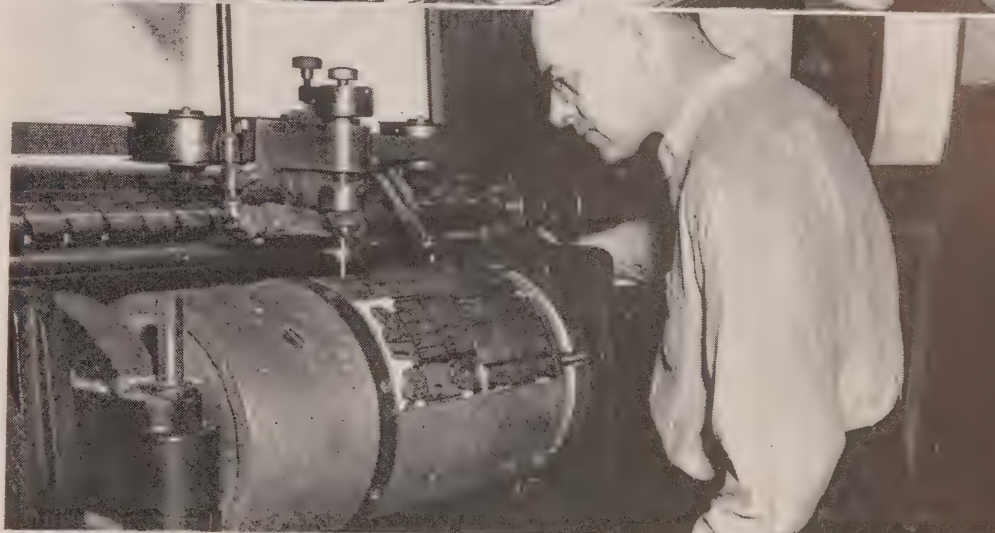
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ETCHERS EMPLOY (top left) two kinds of magic: white magic—yes, we'll take a bow—that's Hydro—and black magic like this craftsman is employing as an acid resistant . . . Hold on to everything. It's "Dragon's Blood!"

OVER IN (top right) this etching bath Hydro's white magic is working as electricity agitates the mordant that will engrave the picture on the zinc or copper plate, giving a constant and even swirl to the biting acid.

DRIVEN BY Hydro power and guided by the craftsman's skilful hand a sharp-edged routing instrument removes unwanted surfaces from the plate. Below, another craftsman is engaged at a similar task upon a curved electrotype.



YOU CANNOT see a pearl grow inside an oyster. But you can see a copper shell electrolytically grown on the wax or lead mould of an engraving. In this way duplicates of the original are produced for general distribution.



'MID HYDRO SORCERIES

(Continued from page 6)

plate and subjected to heat so that it runs slightly down the sides of the lines, effectively controlling any unruly conduct on the part of the etch. Just as an old printer can locate a printing shop by the smell of the ink, although it may be hidden in the bowels of the earth, so, we are led to believe, an engraver can find his way to where his craft is being practised by sniffing the "dragon's blood."

The name "dragon's blood" is derived from ancient pharmacology. The chemists of the middle ages used the resin obtained from the fruit of certain palm trees, particularly the dragon tree of the Canary Islands, in the preparation of medicinal astringents. The tree was probably named on account of its resinous product which is reddish brown in colour and to the credulous bore a fancied resemblance to the vital fluid of the fabulous monster. As an acid resister in photo-engraving the resin from a type of Malayan palm is preferred. It has much the same colour, however, and the name has been retained.

When the plate has been etched it goes on to the electric routing machine. Here a craftsman, using a fine steel instrument with flexible attachment, crops out any unwanted parts of the surface, and, if this has not already been attended to, he now divides the metal into separate engravings or "cuts." A proof is then pulled from the plate or plates, sent back

to be compared with the original copy and any necessary alterations made. When passed, the plate is finished off and mounted on a wood block ready for the printer. Here, as in all modern plants, electric lathes and electric nailing machines are used in these processes, assuring both speed and precision.

Electricity Vital Factor

And now we come to a section of the photo-engraving industry where electricity not only supplies power and lighting but is the vital factor in actual processing. By electrotyping, fine engravings of pictures required for general use and distribution can be duplicated and the originals thus protected from the possibility of damage through mishandling.

This place is filled with tanks, hydraulic presses and vats of boiling metal. Bare-chested men in leathern aprons are working at a variety of tasks amid a complexity of machines. Compared with the concentrated illuminations we have just witnessed, the lighting seems a trifle dim as if Hydro were withdrawing some of its customary brilliance to concentrate on the vital task in hand.

At a table over in a corner a man is pouring melted wax onto a level metal plate called a "case". He is preparing to take the mould of an engraving. When the wax has set, he trims the overflow from the edges with a knife and then puts the case in an electric machine which shaves the surface of the wax down to a standard height and uniform thickness. He then flares it over a

flame to give it a smooth surface.

After being carefully brushed over with fine graphite, the "case" and the engraving "forme" are placed in contact with each other in a press and subjected to the necessary pressure. When the mould is made it goes on to the "builder," who trims off the wax which has spread over the "case." The mould is then dusted with graphite to make the surface conductive, and a thin sheet of copper is inserted at the top of the "case." In this piece of copper there are two holes for hooks so that the "case" can be conveniently hung on the rod in the depositing bath. Instead of dusting with graphite, the mould is sometimes covered with a solution of copper sulphate into which fine iron filings have been sprinkled.

Electrotyping Process

The depositing equipment consists of a lead-lined tank filled close to the top with water permeated by copper sulphate with a percentage of sulphuric acid—kept in constant agitation to maintain a uniform concentration. The current is brought from a dynamo near at hand through a resistance board to the bath by two copper rods running along the length of the tank. One is connected with the positive and the other with the negative pole of the dynamo. Shorter copper rods run across the tank. From the short rod connected with the positive pole a copper plate is suspended by hooks in the solution. The mould of the engraving is suspended in a similar manner from the other short rod connected with the negative pole and faces the copper plate. Under electro-chemical action a copper shell grows on the mould like a pearl in an oyster.

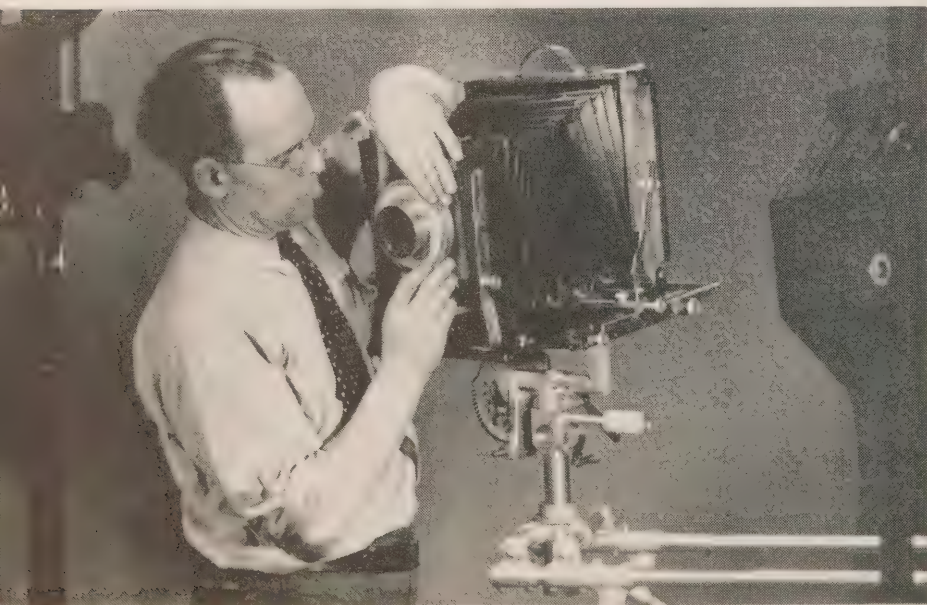
When the deposition is completed—and it has to be nicely timed—the mould is removed from the tank and the shell, which has received the impression of the engraving, is separated by pouring hot water over the wax.

The thin copper shell has now to be backed with metal. To make this adhere to the copper the back of the shell has to be fluxed. This is accomplished with a soldering fluid covered by tin foil fused to the solder by heat.

Back With Molten Lead

And now men get busy at the vats of molten metal—a nice mixture of tin, antimony and lead, which poured down from the castle keep in the days when knights were bold would have been calculated to break up any escalading parties. Workers have to be careful to see that their ladles are dry when they dish out this fluid. A drop of water in the vat, and the molten metal bubbles up in a miniature geyser. A splash on exposed face or arms, might burn the

(Continued on page 30)



PREPARING FOR an exposure of one five-thousandth of a second. The camera will be connected with an electrical device which will produce a flash of 50,000,000 lumens in a gaseous type of lamp—equivalent to the concentrated illumination of 70,000 60-watt Hydro bulbs!



AFTER DEVELOPING (top, left) the negatives of photographs, taken by the process camera, are stripped and placed, reverse side up, on glass "flats" in preparation for printing on the engraving plates.



SENSITIZING (top, right) a copper plate. The solution which is being poured by the craftsman on the metal will be evenly distributed over the surface by electrically-controlled "whirling" in the vat on which his arm is resting.



PRINTING IS carried out under regulated Hydro lighting. The glass "flat" and the metal plate are placed in close contact in a printing frame and the sensitized plate receives an impression from the negative.



AFTER PRINTING the "flat" and the plate are carefully removed from the frame. The plate is washed to clear the parts of the coating which have not become hardened through the action of light and the design becomes clearly visible.

WANTON DESTRUCTION OF STREET LIGHTS COSTLY AND SERIOUS TO ONTARIO PEOPLE

Parents Blamed For Thoughtless Acts On Part Of Children—Hydro Officials Would Enlist Co-operation Of Home And School Associations, Church Organizations, Parents, Teachers And Children To Emphasize Seriousness of Situation

**By Harry M. Blake,
Hydro News**

Wholesale destruction of street lamps, bushings, insulators and lightning arresters is not only costing the people of Ontario thousands of dollars every year but it is causing partial blackouts in residential and suburban areas and creating serious problems associated with the maintenance of public safety on highways and streets and in parks.

The damage is ascribed to boys—usually in the “teen” age group—who roam the streets and fields after school hours, taking pot-shots at the lights and other electrical fixtures with stones, catapults and air-guns and occasionally even with .22-calibre rifles. Hydro municipal commissions are kept continually on the go replacing broken lights, and the shortage of material supplies is adding considerably to their worries. Make-shift replacements have frequently to be resorted to. Often there can be no immediate restoration, and bridges, tunnels and sections of streets must remain without illumination for an indefinite period.

Drastic action was taken by police recently in one municipality where a number of boys were punished for malicious destruction of Hydro property with the parents being called upon to foot the bill for the damage. The parents were reminded that it was actually their own property which had been destroyed by the boys for Hydro is a public ownership enterprise.

While Hydro officials in the various municipalities agree that the time has come for taking more effective action to curb wanton destruction, they feel that, in the first place, an effort should be made to enlist the co-operation of Home and School associations, church and other organizations and of parents, teachers and children in drawing attention to the seriousness of the situation.

Many parents, teachers and psychologists declare that the blame for malicious actions on the part of children must be laid at the door of irresponsible parents who, in many cases, they claim “have spared the rod and spoiled the child.”

Damage In Toronto

Some idea of the seriousness of this situation may be gathered from a survey of the damage inflicted in Toronto and neighbourhood municipalities.

Hydro News learned that in the city of Toronto during last year alone 6,365 lamp bulbs and sockets were destroyed and 8,336 glass cylinders broken. During the first four months of the current year 4,692 lamps have been put out of commission. It was pointed out that, if this ratio of destruction were maintained, the total for 1947, including cylinders, might be expected to exceed 15,000.

According to statistics furnished Hydro News, lamp-breaking “epidemics” have been wide-spread throughout the city. In 1945 the situation got really out of hand with the breaking of 1,169 pear-shaped mountings. The parks have been visited by juvenile marksmen on several occasions, and the lights bordering long sections of roadway have been “put out.” At Sackville Place two broken lamps were replaced only to have the new ones broken again almost immediately. The lights in Rosedale Ravine and in Kew Gardens have on recent occasions provided only a flicker of their customary illumination, and there has been a heavy demand on replacements. As late as May 7, 26 lamps were broken on Dundas Street East and about the same time the reflectors for the lamps at Glen Grove, North Toronto, were shot out—this time apparently with “.22” rifles.

These are only samples of what has been going on. Throwing and shooting at lights on the way to and from school is said to have become a regular pastime for many boys who seem to regard it just as a form of sport, undisturbed by any consideration of the trouble, inconvenience and expense it occasions to the community.

New Lights Destroyed

In Scarborough Township, Ronald Harrison, manager of the Public Utilities Commission, had to arrange for a power shut-down on Sunday, September 22, last year in order that the replacement of broken lights could be carried out safely and effectively. It was explained that many broken bulbs had literally to be dug out of their sockets.

Twenty-two new street lights of a very modern pattern were installed for the Scarborough commission during January and February of this year. Eight of these have already been destroyed. At the switch-over on St. Clair avenue, where a 13,000-volt line feeds power into Scarborough from Leaside, all the insulators

were recently broken and on May 15, while Hydro News was preparing to photograph the damage, Foreman E. M. Kerr of the Scarborough commission discovered another insulator further down the line which had been shattered like a clay pigeon since the patrol of the previous evening.

The exposed Fallingbrook sub-station in Scarborough is now carrying on with broken insulators. The lights at the Morningside and Poplar Road bus stops on the Kingston Road were both shot out a short time ago. The bulbs have been replaced, but so far it has been impossible to restore the proper type of mantle. Many other lights in the West-hill district have been broken, and there is a suspicion that some boys have been indulging in “target” shooting from the verandahs of houses.

Red Light a Target

In the Victoria Park subway the mantle of the red light at the end of the central supporting pier is scored with “B.B.” bullet marks and the heavy glass is cracked. As this light is placed as a warning to traffic just where the highway divides to pass under the bridge, it is regarded as fortunate that the actual light, itself, was not destroyed. A crash into the solid stone pier would write “finis” to the life of any motorist or truck driver.

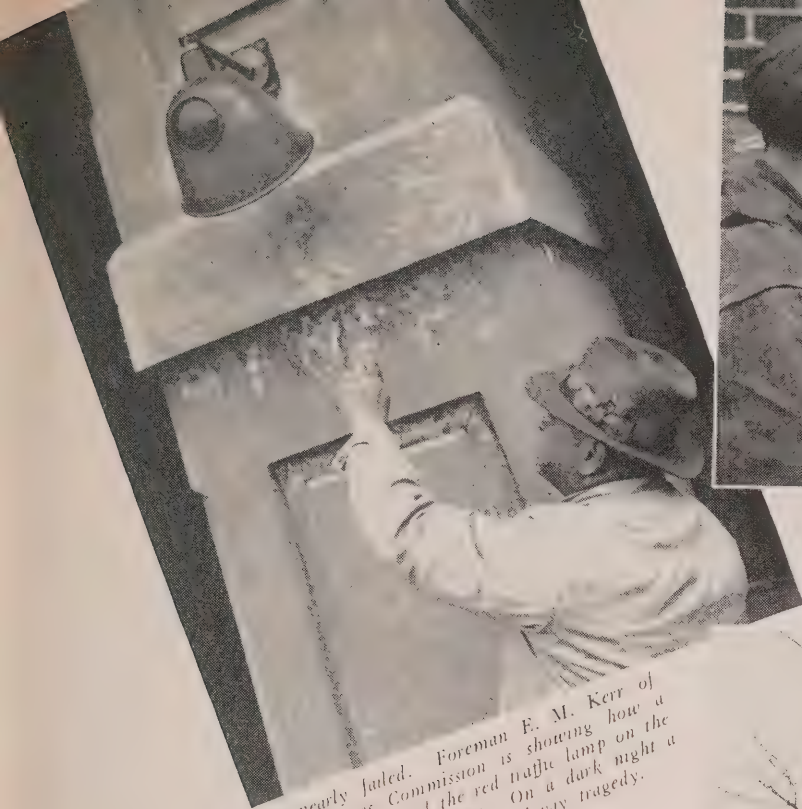
“At least ten percent of our lighting has been affected by boys throwing stones and shooting,” C. H. Proctor, superintendent of the North York Hydro-Electric Commission, told Hydro News. “There is a lull for a while and then it breaks out all over again. The nuisance is increasing, too. The idea of using Hydro lights for targets and exhibitions of marksmanship is apparently spreading among the boys.”

The radial wave reflectors, once the pride of the North York lighting system, are now as extinct as the dodo. All that was left for the Hydro News to photograph was a single museum specimen. And they cannot be replaced.

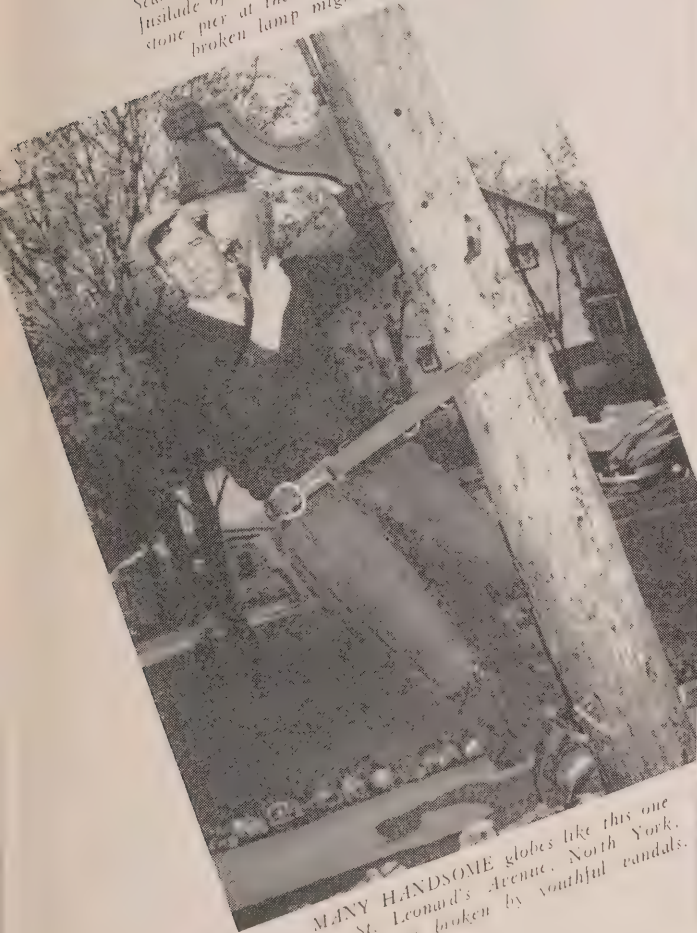
Transformer Damaged

Accompanied by Mr. Proctor, Hydro News travelled out to see a damaged transformer near the York Downs Golf Club. Close at hand is a swimming pool, naturally a very popular spot for boys in the summertime. The pool is fed

(Continued on page 29)



THE LIGHT that nearly failed. Foreman E. M. Kerr of Scarborough Public Utilities Commission is showing how a fusilade of "B.B.'s" shot just missed the red traffic lamp on the stone pier at the Victoria Park subway. On a dark night a broken lamp might mean another highway tragedy.



MANY HANDSOME globes like this one on St. Leonard's Avenue, North York, have been broken by youthful vandals.



EXAMPLES OF street lighting equipment wrecked by juveniles in North York township. They include transformer cut-outs, insulators, mantles, reflectors and broken lamps. Inset—a damaged lamp at a bus stop in the West Hill district of Scarborough.



"SO HARD to get bushings now," mutters Frank Rutt, line construction foreman of the North York Hydro-Electric Commission, as he examines two broken ones on a transformer at York Downs. Below—no more lighting on Hogg's Hollow bridge, just covers to protect empty lamp sockets.





MAYOR CALDWELL



Born in Norfolk County and educated at Vienna, Ontario, **JAMES BRUCE CALDWELL** of St. Thomas, graduated from the University of Toronto in pharmacy in 1925.

Although this is his first term as mayor and Hydro commissioner, Mr. Caldwell is not new to public life, as he has been chairman of the Industrial Board, City Council, for four years and has also taken an active part in social service work.

A descendant of the pioneers who settled in the area, the chief magistrate is actively interested in sports and has a fine array of trophies to recall his athletic career while at college.

PERCY R. LOCKE (Son of the Soil)

Perhaps one of the first farms in Ontario to have Hydro service, the Locke farm, located about a mile north of St. Thomas, is owned by Percy R. Locke, a member of the St. Thomas Public Utilities Commission. Mr. Locke's great grandfather came from Devonshire, England, and homesteaded on this site 128 years ago. In 1912 they had equipped the farm with electric milking machines, a hot water heater and an electric grain grinder.

Mr. Locke attended both public and high schools in St. Thomas and for ten years has been actively associated with Hydro affairs. For eight years he has been on the executive of the O.M.E.A. and twice he has been chairman of the local commission. Mr. Locke has been in the insurance business for 19 years.

HYDRO COMMISSIONER

(Put Elephants on Poles)

A native of St. Thomas where he is also a Hydro commissioner **GEORGE DENNIS LANG** believes that his home town can attain still wider prominence by capitalizing on the fact that "Jumbo" the famous elephant was killed there on September 15, 1885. This theory found practical expression during a recent reunion when the street decorations which were under Mr. Lang's direction, featured tin elephants of every colour on every pole on the main street.

This is Mr. Lang's tenth year in public office. In his younger days the commissioner was a local star on the rugby field and on the basketball floor. On two occasions his team reached the O.R.F.U. final.

Mr. Lang's father was a tea merchant with novel ideas for merchandising his product. For twenty years, his cart, which was built in the shape of a tea pot, was a familiar spectacle on the streets of St. Thomas.

In addition to being a town and Hydro booster, Mr. Lang is also active along other lines. The milk question has occupied his attention and just last year he appeared before the Royal Commission on Milk as a delegate from his district.

W. M. REID PASSES

WILLIAM M. REID, aged 53, who died recently following an accident, had been identified with the Commission's operating department for 28 years and had been located at Chatham since 1934.

A native of Vinemount, Ontario, he was widely known in and beyond Hydro circles. Following his graduation with the degree of B.A.Sc., in electrical engineering from the University of Toronto in 1919, he joined the meter section of the operating department. Before going to Chatham, he worked for a number of years at Barrie and Stratford.

Surviving are his widow, a daughter and a brother and sister.

ROY BERTRAND BOWEY



Serving his first year as Hydro commissioner, **ROY BERTRAND BOWEY** of the St. Thomas Public Utilities Commission has always taken an active part in public business. Being a director of the St. Thomas Motor Club, vice-president of the Elgin Kennel Club and chairman of the Suburban Area Roads Commission, does not leave him too much free time, but, as he explained to Hydro News, "this type of work is my hobby."

When he was going to school some fifty years ago, Mr. Bowey was known as an excellent swimmer and now enjoys an evening of bowling.

ST. THOMAS' CHAIRMAN

Chairman of the St. Thomas Public Utilities Commission, **ERNEST E. SEE-GAR**, completes 20 years of Hydro administration this year.

Born in St. Marys and educated in London, the chairman at one time "cut quite a figure" on the ball diamond. By vocation, Mr. Seegar is electrical foreman at the New York Central Yards and has still retained his boyish enthusiasm for locomotives.

His home on Myrtle Street is a show-place, his fine garden reflecting many hours of hard and patient labour.



DR. R.W.I. URQUHART MEDICAL DIRECTOR

INSECT PESTS

A great number of Hydro employees live and work in parts of Ontario where black flies and mosquitoes abound. In the summer months these pests make life in the bush anything but comfortable. It is not surprising, therefore, that throughout the years the medical section of the Commission has been concerned with methods to relieve this situation. While a study of the problem has indicated that conditions may be somewhat improved, it must be admitted that to date no completely satisfactory solution has been found.

The problem divides itself into two sections; the first, pest control, and the second, personal protection. By pest control is meant the measures that can be taken to bring under control and limit the factors which contribute to the development of a particular pest in a particular area. By personal protection is meant the measures that can be taken by the individual to protect himself while in pest-ridden areas. These measures vary with the particular pest.

All writers on the subject of pest control stress the importance of a knowledge of the life history of the particular pest, in order that control measures may be properly chosen and applied. This was particularly emphasized in a review of Black Fly and Mosquito Control by F. Corin of the operating department in 1945.

Mosquito Control

The mosquito breeds in stagnant water. Thus swamps, ponds, puddles and ditches, as well as water lodged in old barrels, tin cans, etc., which are often found about human habitations, are a source of trouble. Since it is at this stage that the mosquito is most vulnerable, the elimination or treatment of these breeding places is the best method of control.

Where possible, scrub-brush should be cleared and long grass cut, swamps and

ponds drained. Ditches should be properly graded and cleared, wet spots drained or filled in. Care should be taken to see that the area is kept free from tin cans and other possible receptacles of stagnant water. These procedures will eliminate many of the mosquito breeding places.

In many locations such elimination of stagnant water is not possible or feasible. In such instances, treatment of the area with petroleum oil or DDT is recommended. DDT is now the method of choice. It may be used as a 5 per cent solution in oil (2 pounds of DDT to each 5 gallons of oil) or as a 5 per cent aqueous emulsion (1 volume of 25 per cent DDT concentrate to 4 volumes of water). In both cases it is dispersed with a slow delivery of a fine mist from an ordinary garden pressure sprayer or similar contrivance. With the 5 per cent DDT solution in oil, as little as 1 to 2 quarts per acre is effective. With the aqueous emulsion 1 pint of the 25 per cent DDT concentrate will, when diluted, treat satisfactorily 2½ acres of breeding area.

DDT may also be used for the control of adult mosquitoes. It is best used as a residual spray particularly in buildings, tents, etc. It is applied as a 5 per cent solution in kerosene or in 5 per cent water emulsion using the 25 per cent DDT concentrate in the proportions mentioned above. For the purpose of residual spray, the nozzle should be adjusted to give a fine but not a mist spray. The surfaces treated should be left wet. Tents may be so treated before being sent out to the field.

Cleared areas about a camp or colony may also be treated with either of the above preparations. Three to five gallons per acre of the 5 per cent DDT preparations are necessary and will give protection for several weeks. The treatment may then have to be repeated.

Last year the Department of Lands and Forests of the Province of Ontario were spraying DDT by aeroplane for the control of the spruce bud worm in the Nipi-

gon area. They were prevailed upon, as an experiment, to spray the colony at Cameron Falls. Reports indicate that some relief from both mosquitoes and black flies was experienced for a period of two to three weeks. Then they both returned. This method of control is not likely to be repeated as the cost at present is prohibitive.

Black Fly Control

While the problems involved in mosquito control have been well worked out, the situation with regard to black flies is not as clear. Black flies breed in shallow running water, the larvae developing on rocks, stones, logs and debris, in the water. They do not live in stagnant water. Little experimental work has been done in regard to black fly control.

Incidental observations in connection with the spruce bud worm spraying referred to above, indicate that the black fly larvae are killed as readily as the mosquito larvae with DDT. There was some evidence to show that the concentration of DDT used, had some slight deleterious effect upon fish life, etc., in the area. Problems of this nature have yet to be worked out. Certainly some of the streams known to be black fly breeders in the region of a camp or colony, could be sprayed with DDT in the concentrations noted above. The ultimate effect of such treatment is as yet uncertain. The problem with regard to Commission properties is complicated, in that they are relatively small sections in a vast pest breeding area. Even if such a section is treated, the first breeze may bring in fresh swarms of hungry flies.

This brings us to the point of personal protection. Obviously DDT sprayed in and about buildings affords a measure of protection. Further protection depends upon the use of insect repellents applied to the exposed parts of the individual. The Commission has always provided re-

(Continued on page 30)

SAFETY LEAGUE USES COMMISSION ADVERTISEMENT

Produced As Poster And Distributed To Schools Throughout Ontario — Emphasizes Importance Of "Playing Safe" When In Vicinity Of Distribution Lines And Other Commission Equipment

"What do you mean . . . I'm lucky?"

Any young gentleman, finding himself in the "highly" undignified position of being suspended by the seat of the pants from a piece of barbed wire, could quite conceivably ask such a question if it were suggested that he were lucky.

But, in this instance, the young man was exceedingly lucky. A glance at the accompanying drawing illustrates the point. This particular drawing was used by The Hydro-Electric Power Commission of Ontario in an institutional advertisement to emphasize the importance of "playing safe" when in the vicinity of Hydro poles, distribution lines, transformer stations or fallen wires.

The advertisement in question was ultimately produced as a large poster, designated as Bulletin No. 1310, shown right and distributed to public schools throughout Ontario by the Ontario Safety League, production being on a co-operative basis with the Commission contributing the engravings.

This 23" x 12" poster points up a warning that the safest way for children and adults alike to avoid electrical hazards when in the vicinity of Commission property is to observe the following precautions:

1. Do not climb poles,
2. Stay away from distribution lines and transformer stations,
3. Keep away from fallen wires.

In a letter to J. A. Blay, the Commission's supervisor of promotion, Mr. P. B. La Trobe, general manager of the League, wrote:

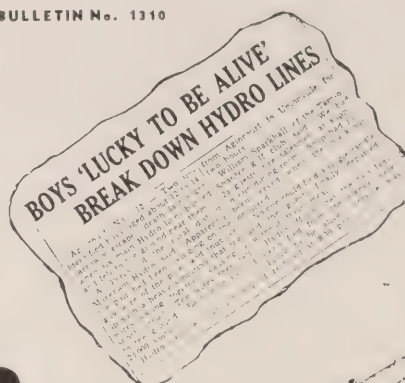
"As you probably know, this branch of our work among the children is one of the most important of all our public safety activities. The thought that it is possible to prevent a child from being accidentally killed or from being injured by means of inculcating safety ideas to form their daily safety habits finds a very warm spot in the hearts of those men whom I have had the privilege of contacting for the League during the last twenty years.

"The continuity of our bulletin service, now recognized for its educational value throughout the province of Ontario, has been made possible year after year by

the recognition given by your excellent organization, which I assure you, is most outstanding, and which, I assure you, is symbolic of the type of organization and its policy, the direction, of course of which is attributed to your good self.

"May I again extend my own humble thanks for the part that you have played in the production of this bulletin, and my admiration for your ability to further this important work by your generous co-operation."

BULLETIN No. 1310



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**ONTARIO SAFETY LEAGUE
68 KING ST. E.
TORONTO**



"What do you mean . . . I'm lucky?"

Lucky lad! Getting snagged on the wire in his effort to climb over a Hydro barrier . . . probably to recover a ball . . . may have saved his life. Some boys have not been so lucky.

Hydro energy is one of the finest things we have in Ontario to make for better living. But it can stop one from living, if you thoughtlessly give it a chance to flash through your body. Every possible precaution for safety is taken by your Hydro; but once in a while someone gets careless or "takes a chance", and tragedy strikes. A boy climbs a pole and touches a wire. Or he flies his kite near a Hydro line, and it contacts a high-voltage circuit and carries death or injury to whoever is holding it. Sometimes a storm breaks down a line and someone takes hold of the broken live wire with disastrous results. These are just examples of acts that are beyond the power of Hydro to prevent! Your Hydro can only warn of danger, and seek co-operation of parents and teachers and all who have influence with those who might expose themselves to that danger.

Hydro need never be a threat to anyone who:

1. Will not climb poles.
2. Will stay away from distribution lines and transformer stations.
3. Will keep away from fallen wires.

For your safety, in case of trouble immediately notify your nearest Hydro office. But never, never touch a fallen wire.

SAFE

POWER and PLYWOOD

By Grace J. Carter,
Hydro News

For centuries man has been working on the principle of "plying" strips of wood into panels, and some historians claim that it could be used as a standard of our civilization, and that the pattern of human progress might be traced through the moulding of veneer and plywood.

According to the records, it was in the 1880's when the mechanical production of plywood was originated and introduced in Russian factories. Since that time great strides have been made in this field, and today this ancient art has been developed to such an extent that the natural beauty of wood is retained and is available in many forms, including household furniture.

Originally plywood was devised as a preventive measure against the shrink-

age of wood which is evident when lumber alone is used. Instead of cutting the log into lumber as was formerly done, it was cut into thin sheets. These thin sheets are known as "veneers." In building up a panel, the veneers were glued together, each alternate sheet being at right angles. The resulting panel is called "plywood."

The normal shrinkage of wood is between 10 to 20 percent across the grain, and only 3 to 6 percent with the grain. When the plywood panel is built up in the usual manner, the bonding material prevents the shrinkage of the panel to any excessive amount.

In the last few years this industry has forged ahead and has spread to all parts of the world. Hydro News recently had the privilege of visiting one of these modern factories—Dominion Plywoods Limited at Southampton, Ontario, where with the aid of Hydro, a new and sim-

plified technique for the manufacture of moulded plywood panels is in operation. The process, involving the use of a 15 kilowatt high frequency unit, cures or sets the glue, for several layers or thicknesses of plywood in a matter of minutes. Prior to the instigation of this method, the moulding process required hours to complete.

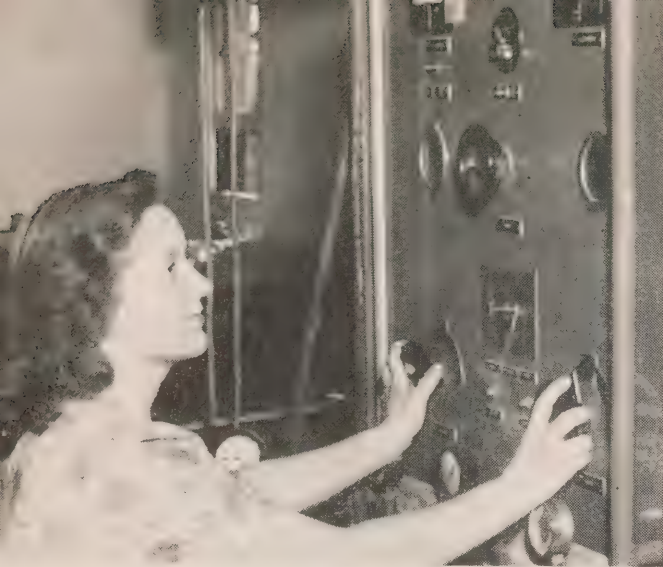
Uniform Heating

Briefly, the principle of high frequency electrostatic heating is to take electricity and convert it to a form that will, in effect, cause the molecules (all matter is composed of molecules which are in turn made of atoms in various geometric arrangements) to distort and rub together. The internal friction, thus created, results in uniform heating of non-metallic substances, such as plywood. Heat is required to cure the resins used in bonding wood together.

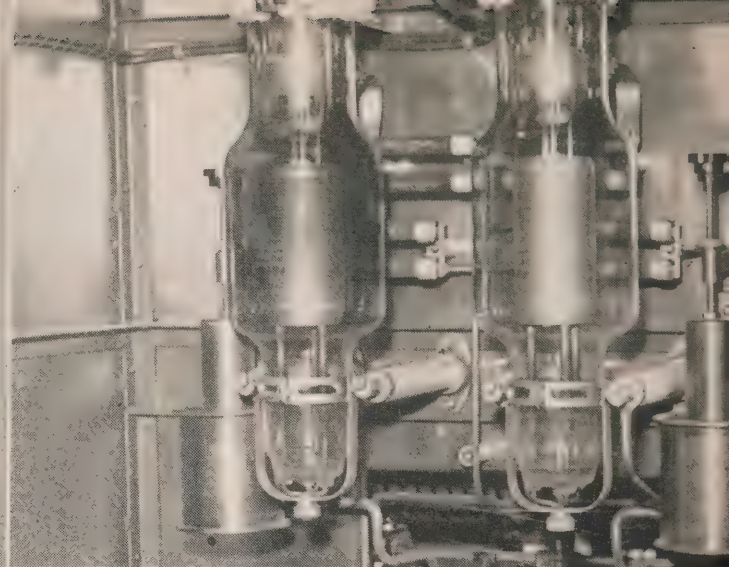
(Continued on page 18)



A SECTION of the attractive main office in the Dominion Plywoods Limited at Southampton, Ontario, which shows various patterns in moulded plywood panels, inlays and trims which have all been designed by their engineers and built to their own specifications.



JUST IN time to see the operator switching on the high frequency unit which was installed to speed up the moulding process of plywood panels.



THIS SHOWS some of the "innards" of the high frequency unit. These tubes have to be made to supply an oscillating voltage of between 1.92 to 10 megacycles per second. At times, these tubes have to be cooled by forced air.



THIS IS a mould for the moulding, with high frequency, of a waterfall chest top. The mould has just been opened and the centre operator is removing one of the electrodes. Note the rubber bag through which fluid air pressure can be applied to the panel.

ANOTHER PROCESS used is the bonding of plywood by the vacuum bag method. The glued-up panel has been stapled onto the form as shown and is placed on a tray.



THIS IS known as the five opening hot press. Steam is fed through the platens to give the required heat, and hydraulic pistons supply the pressure for the curing of the panel.

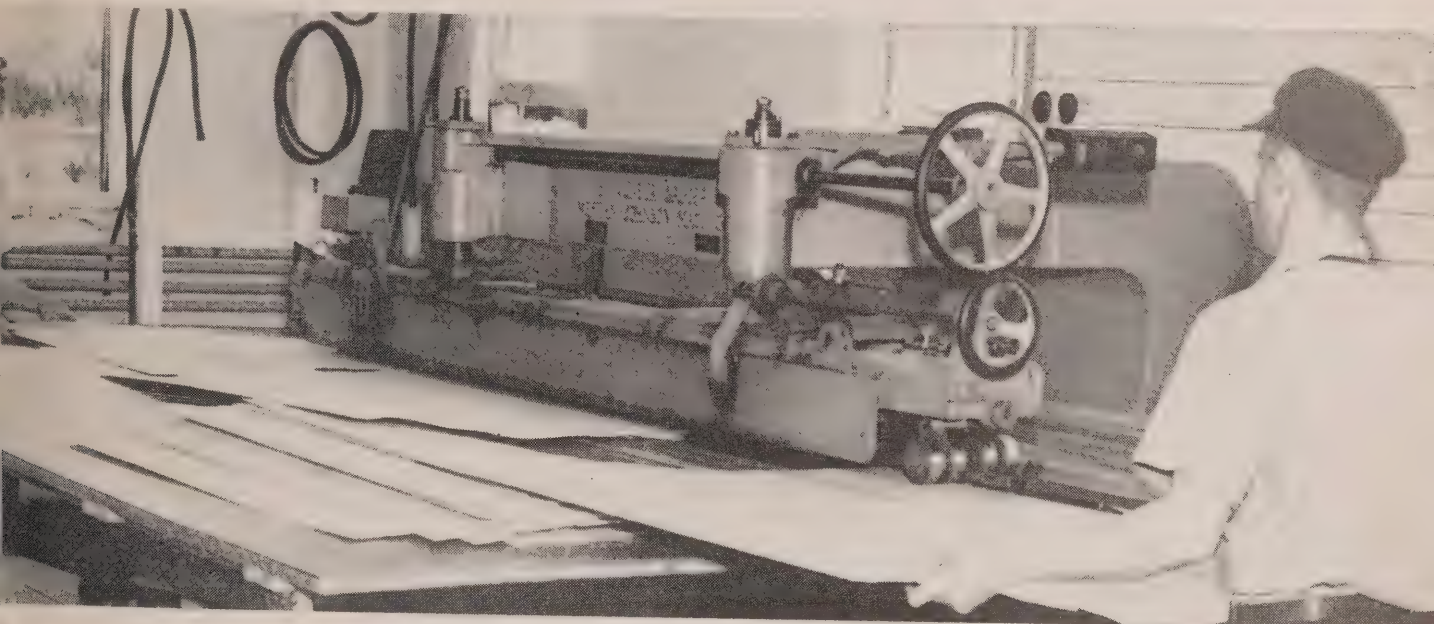




THIS is a glue spreader, which is operated by a two horsepower reversible motor, shows a sheet of veneer being passed through the rolls. The veneer is coated evenly on both sides with glue.



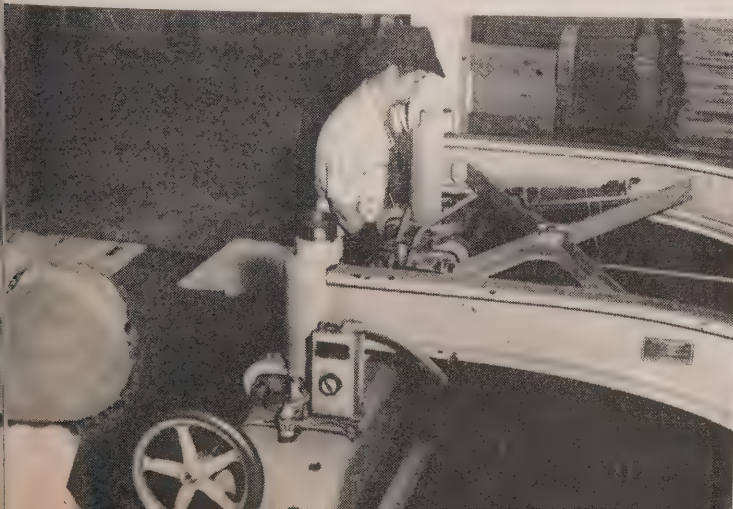
IN ORDER to have perfectly smooth panels, "belting" or "sanding" is necessary. Here the operator is shown manipulating a pad on the smooth side of the belt.



THIS illustration is shown an electrically operated veneer splicer where two strips of veneer are being joined or spliced together at its edges to form a wider piece. A sheet of veneer can be built to any desired width in this manner.

view of a veneer splicer. Each piece of veneer has had a glue previously to the edges and in passing under the rolls the veneers are brought tightly in contact with one another.

MATCHING AND clipping of face veneer is a highly skilled technique, as the resultant beauty of the panel depends on the skill of the veneer matcher.



POWER AND PLYWOOD

(Continued from page 15)

In the high frequency method there are two classes of bonding materials or glues which are in general use. These are urea and phenol formaldehyde resins.

In the past, the method used to supply heat to a glue line was to apply a heated platen or resistance strip heater to the surface of the wood, and thus depend upon conduction to bring heat to the innermost glue line. Wood is known to be a poor conductor of heat and if the particular job were thick, in that it involved bonding together several layers of wood, the time for conduction of heat would be excessive, even if the hottest platen or strip were applied against the outer layer or surface of the wood.

Pressure Varies

As heat alone will not bond a panel, pressure must also be applied. The amount of pressure varies from 40 to 350 pounds per square inch and is dependent upon the type of glue used. For urea glues with fluid pressure (air pressure inside a rubber bag) panels may be cured at 40 pounds per square inch. With phenolics the pressure used is usually not less than 60, and preferably not less than 80 pounds per square inch.

Circuit Of Transformers

In non-technical terms, the procedure of heating wood by the high frequency method is as follows: the high-frequency unit or generator is connected to two metal plates called electrodes, and the wood to be heated is placed between these electrodes which are plates of a condenser, the wood being the dielectric. The generator employs a circuit of transformers, rectifier and oscillator tubes to convert the regular alternating current to high-frequency power. Wood is a very poor conductor of electricity and its resistance to direct or ordinary 110 volt alternating current is very high. Indeed, it would require tremendous electrical pressure, running into millions of volts, to cause enough current to flow through wood of any appreciable thickness to make it heat up. As the frequency is increased from 60 cycles per second to 2 million cycles per second (two mega cycles) the effective resistance of the load circuit drops.

Has Many Advantages

It is pointed out that many advantages result from the use of high-frequency dielectric heating equipment, and these may be briefly summarized as follows: the product is heated uniformly throughout; there is improved quality of the product through uniform heating, no redistribution of moisture, and less handling resulting in speedier production; it also

reduces labour and saves floor space, while it offers greater flexibility than other methods of heating.

It is claimed that the high-frequency unit may also be used as a substitute for a dry kiln. To dry lumber, it is first cut to the approximate size required and then placed between electrodes. This process tends to evaporate the moisture content of the lumber quickly and evenly throughout. Evaporation of moisture from the inner fibres outward eliminates any danger of case hardening, honey-combing or brashness. Checks and splits due to excess drying of the exterior are also eliminated.

Many Pleasing Combinations

The Dominion Plywoods Limited, served by the Southampton Public Utilities Commission, also use other processes in their factory and needless to say, Hydro plays an important part in these operations, which include electrically-powered woodworking devices; equipment in the machine shop; over-head drives for the operation of clippers and sanders; and individual motor drives on tapless splicers.

When talking to officials of this plant they expressed the opinion to Hydro News that plywood was just "coming into its own." They proudly state that their craftsmen are able to obtain many pleasing combinations of colours and grains for office panelling, ceilings, office desks, dressers, cedar chests, radio cabinets, chairs, tables, as well as window valances, base boards, window and door trims, and for many other uses.

Revolutionized Industry

Although veneered or plywood furniture has been made for centuries, the new bonding methods originated during the war in the production of aircraft and other war equipment has, in many cases, revolutionized this industry. Craftsmen claim that they now have ways and means of decreasing the weight of furniture, improving the designs and reducing the costs. Although plywood will not, in all cases, replace lumber, steel and other metals, it proved to be a fine wartime substitute which is now being made available for peace-time uses. Plywood craftsmen claim that many flat surfaces are better when made with plywood which, when properly designed and bonded, and compared on a strength to weight ratio, can be made stronger than steel. Another feature is that many curved surfaces which cannot be made satisfactorily by any other method are now possible with plywood construction.

This company's engineers are optimistic about the future of plywood and are already working on plans for the more extensive use of this product.

GRIMSBY PAYS OFF FINAL DEBENTURE

Another milestone was passed in the history of Grimsby when the final payment was made recently on the outstanding debentures of its local Hydro system.

In the summer of 1940 an agreement was reached with The Hydro-Electric Power Commission of Ontario as to purchase price, carrying charges and future operation of the system until such time as it would be paid for. Citizens at the January, 1941, election carried the necessary money by-law by a large majority.

The purchase price of the system was set at \$85,344, to be financed by the issuance of debentures over a twenty-year period with interest charges added, making a grand total of \$125,595. Under the agreement with the Commission, the Grimsby Hydro-Electric Commission, could pay off the debentures in any amount they wished. And now, just six years later, the last payment has been made and the ratepayers own their system, entirely free of debt. As the total payment to the Ontario Hydro was approximately \$96,595, the Grimsby citizens saved \$29,000 in interest charges.

The Grimsby plant and system came under the control of the H.E.P.C. in 1930, when the Commission purchased the Dominion Power and Transmission Company.

Members of the present Grimsby Hydro-Electric Commission are: D. E. Anderson, chairman; mayor Henry Bull, and James I. Theal, commissioners; and G. G. Bourne, secretary.

JOHN L. MILLARD DIES

In the recent passing of John L. Millard the town of Aylmer lost one of its oldest residents and a citizen who had been closely associated with electrical developments in the district. From 1918 until his retirement in 1939 Mr. Millard, as superintendent of the local public utilities commission, had been continuously engaged in Hydro activities.

Born 80 years ago at Delmer in Dereham Township, Mr. Millard came to Aylmer with his parents at the age of five and early in life began to evince an interest in the electrical "innovations" which preceded the more practical applications of the new power. As a young man, he installed the first electric wiring in Aylmer and before Hydro appeared on the scene was superintendent of the town's water and lighting plant for many years.

Interment took place in the family plot at the Aylmer cemetery. Mr. Millard is survived by his widow and two married daughters.

ST. THOMAS

The Railway City

By W. Ronald Mathieson,
Hydro News

One of the original members of the family of Hydro municipalities, St. Thomas, which entered into a contract for power in 1908, is a city with an historic past dating back to the 1800's when the early pioneers were first attracted to its pleasant and inviting environs.

It was in the year 1911, when the British people were observing the coronation of George V and introducing national health and unemployment service, that the people of St. Thomas first enjoyed the benefits of Hydro service. During that 36 years the load has increased

from an initial demand of 450 horsepower to 10,000 horsepower used today.

Like many other Canadian cities, St. Thomas has many interesting records in its archives. These records indicate that it was in the year 1790 when Daniel Rapeljie and David Mandeville erected their log house on what would now be considered the outskirts of the town. Kettle Creek, which runs through the city was larger at that time and promised a fine head of water for the operation of a grist mill.

"Stirling," original name of the homestead site, was changed to "St. Thomas" taking that name from Col. Thomas Talbot, who was largely responsible for bring-

ing early settlers to the district about the year 1803. The "Saint" part, it is claimed, was added for euphony.

Col. Talbot took up his residence at another location also named after him, Port Talbot, and included in the settlement was the whole of the present county of Elgin and parts of Essex, Kent, Middlesex and Norfolk. This immense tract of land was granted to Talbot, who incidentally hailed from Ireland, upon the recommendation of Governor Simcoe, for whom Talbot had acted as private secretary from 1791 to 1794. Together they toured Upper Canada and in this particular area they had penetrated inland from Lake Erie to the forks of the Thames where the city of London now stands.

The country made a great impression on Talbot so he made application and was granted 5,000 acres of land on condition that 50 out of every 200 were made available to an actual homesteader.

So the district was given a start and settlement was promoted and people began to arrive by boat and buckboard. The town of St. Thomas was incorpor-

(Continued on page 29)



POSSESSING ALL the advantages associated with the modern Standard of living in a big city and, at the same time, the charm and friendliness of a small town, St. Thomas is situated between London and Port Stanley and has a population of over 18,000. Here is David Pell and his dog Buddy who came within range of the Hydro News' camera.



ALMA COLLEGE (left), a well-known young ladies' school, whose roll includes the names of students from every part of the world, is situated at the east end of St. Thomas and always presents a picture of old world charm. This photograph was taken looking through the main gates.

EVEN THOUGH the business section buildings are old, the merchants have well-illuminated stores and handle high quality merchandise. Before these buildings (right) were erected, some seventy-five years ago, this same site was part of the community race track, and the general opinion seemed to be that the town, in growing, would expand westward. Instead the growth was to the east.



"ONE OF the smartest boxes to be found in a small public utilities' office in the Province", was how the St. Thomas office (left) was described to Hydro News. The plaque on the wall is a likeness of the late Sir Adam Beck, who was the "Father of Hydro" in Ontario. Here is Joyce Tatlett at the cashier's wicket.

LOOKING DOWN the length of the Public Utilities' office (right), Hydro News was able to take a picture showing five of the girls in the staff. They are: Marian Smith, Joyce Tatlett, Gertrude King, Edna Crane and Gertrude Mann. The office is located at 47 1/2 Talbot Street which gets its name from C.L. Talbot who founded the town.





BOTH OF these men (left) are at home in the cab of a locomotive. Ernest E. Seger, (in overalls) who is chairman of the St. Thomas Public Utilities Commission, has worked all his life on trains, and is the electrical foreman of the yards of the New York Central. The other commissioner, sitting in the engineer's seat, is George D. Lang.

HERE IS the giant locomotive (right) in which the boys posed. It weighs 360,000 pounds and is almost 96 feet long. When it is ready for a run, 28 tons of coal are in the tender and 14,000 gallons of water are in the tanks.



IN THE new Timken plant, recently established at St. Thomas, one building (left) has been constructed for electrical apparatus. This view was taken from a balcony over the control panel and shows the machines on a spotless floor.

THIS IS the oldest house (right) in town, according to St. Thomas authorities. It has been a hotel, ham house, grocery, road house and snack bar. No person is just sure when it was built but the foundations of the building are hewn of oak. It is located just a few yards from Kettle Creek.



TORONTO ADEQUATE WIRING SCHOOL

Toronto and neighbouring municipalities were represented at the Adequate Wiring Training school held in the King Edward hotel on May 13. These schools are sponsored by the Electric Service League of Ontario in co-operation with Hydro municipalities and the Hydro-Electric Power Commission of Ontario. Although they are primarily for the purpose of training Hydro men to be local Red Seal advisers, a good representation of contractors was present.

A varied and interesting programme was prepared for the Toronto school. Chairman for the business session, T. E. Dietrich of the H.E.P.C., introduced the various speakers. These included Bob Crichton, Toronto district manager of the Northern Electric Company Ltd., and director of the Electric Service League, who spoke on "The Need for Adequate Wiring;" George Austin, manager of the Electric Service League, who described the operation and success of the Toronto League; James A. Blay, general supervisor

of promotion, H.E.P.C., who dealt with the re-organization of the Electric Service League on a province-wide basis of operation.

Other speakers were Norman Franks, sales manager of the Canadian General Electric Company, and director of the League, who spoke on the "Possibilities of the Province-Wide Operation;" R. E. Bailey, manager of Thomas and Betts of Canada Ltd. (Montreal), and chairman of the C.E.M.A. wiring committee, who discussed the "Manufacturers' Participation and the Use of Tie-In Advertising;" and Alec McTavish, field supervisor of the Electric Service League of Ontario, who described field work and Red Seal specifications.

The morning session closed with a panel of specialists, under the direction of W. A. Ollen-Bittle of the H.E.P.C., answering questions from the floor. Then followed the luncheon session with Bert Merson, vice-chairman of the Toronto Hydro-Electric System, acting as chair-

man. He introduced Mayor Robert Saunders who welcomed the delegates and expressed keen interest in the League from the viewpoint of raising the standard of living in Ontario homes.

M. J. McHenry, director of consumer services, H.E.P.C., and president of the Electric Service League, also spoke. Luncheon speakers drew attention in particular to the pioneering work of E. M. Ashworth, general manager of the Toronto Hydro, and George Austin, who foresaw the value of such a movement and pioneered it through its early stages.

In the afternoon Mr. Austin gave a lecture illustrated with lantern slides portraying the history and work of the League. Harold Hillier of the H.E.P.C. showed a coloured motion picture produced by Westinghouse, and entitled "Dawn of Better Living" which showed graphically the necessity for adequate wiring. The school was brought to a successful close with a dinner in "Vanity Fair."



DELEGATES AT the Toronto Adequate Wiring School pause to admire the illuminated, portable display which was specially designed and illuminated to tell the story of adequate wiring. The wiring diagram, arresting murals and indirect lighting combine to create an interesting exhibit.



ABOVE: OVERALL picture of the Ade-
quate Wiring School business session held
in the King Edward Hotel on May 13.
Right: Exchanging views during recess
at the wiring school.



LEFT: FIRST piece of serious business
for the day was registration and pinning
on the name tags. Below: left to right:
Bob Crichton, manager of the Niagara
Electric Company, Toronto, G. I. Chase,
general manager of Boreman P.E.C.,
A. J. Jennings, chairman of East York
Township Hydro-Electric Commission,
and Bert Merson, vice-chairman of the
Toronto Hydro.



STEWARTVILLE

SILHOUETTED AGAINST the sky, left, the aggregate concrete present a pleasing pattern to the eye when viewed from a low angle. The man in the foreground is turning on an emergency valve that controls an pressure which operates the pneumatic drills.

IN UNPOSED "shot" of a surveying crew, left, comprising Foney Daze, Chas. McLennan, D. K. McComb and G. H. Thomas, who were charting distances when the Hydro News' photographer came along.

THE CHIEF drillers, the crews in the foreground (below) seem to be very much at home while working on the rocky ledges of the man made cut at the site of the Stewartville development on the Madawaska River.

DAY BY day, more concrete is poured and more excavation work is completed bringing closer the time when Hydro's new 81,000 horsepower Stewartville development will be completed and placed in service.

STEWARTVILLE

THIS SNAIL-like apparatus which is being dragged onto the cofferdam at Stewartville (right), is a large capacity pump. Helping in the operation are: A. L. Burgess, Gordon Church, Samuel Brydges, Gordon Gosson and Reg. Finan.



USING A pneumatic drill (left) is no job for a "softy." It takes every ounce of weight that you can put on the handles plus a good strong back to control these machines which bite their way through solid rock.

ANOTHER VIEW of the pump (below), still on its shipping skids, and in the background is an interesting sight of steps which greatly facilitates the movement of construction men as they go about their respective tasks.



HERE ARE two of a number of Hydro houses (above) which will be used by members of the Commission's operating staff who will be on 24-hour-a-day duty as soon as the Stewartville development begins to generate power.



Hydro

HOME FORUM

by Edithemma Muir

HOME ECONOMIST

Summer weather and strenuous work often impair the appetite. The home-maker who prepares average portions will find she very often has leftovers. Gelatin helps to make leftovers into good-to-eat salads, main dishes and desserts. These servings are often more attractive than re-heated foods. A cupful of meat and a cupful of vegetables may be seasoned and added to a cup of hot vegetable liquid in which a tablespoon of gelatin has been dissolved.

* * *

Surface mildew on cottons may be removed by soaking in a solution of Javelle water, rinsed in water and spread out in the sun on green grass for several hours.

* * *

Green grass stains should be removed according to the damaged fabric. On white cotton or rayon use javelle water; on white wool or silk use peroxide; and on coloured wools treat with alcohol.

* * *

If your wash shows signs of spotting and discoloration from rust scale in water pipes, use a small faucet filter, and this disturbing problem will be ended immediately.

* * *

Crusty cobblers and shortcakes with fresh berries take half as much shortening as pie; are quick and easy to bake.

* * *

For fruit salad dressings blend cheese, salt, sugar, paprika, orange and lemon juice.

* * *

Remember to use a dry cloth to remove warm glass dishes from the oven. A damp cloth may cause the utensil to crack.

* * *

Cool beverages consume more sugar than hot beverages since the sugar does not completely dissolve for a while. To avoid waste, make a thick syrup of the amount of sugar you will need, and add before serving.

CHERRY ICE

1/2 cup sugar
1/2 cup water
1/4 cup light corn syrup
2 tbsp. lemon juice
Cooked or canned pitted sour red cherries

Boil sugar and water 5 minutes; cool. Press 1 1/2 cups cherries through sieve (there should be 1 cup). Combine with sugar, corn syrup and lemon juice. Pour into freezing tray. Set control at coldest position; freeze to mush. Remove to chilled bowl; beat until light. Replace in freezing tray; freeze firm. Serves 3 or 4.

JELLIED MEAT LOAF

1 tbsp. gelatin
1/4 cup cold water
3/4 cup boiling water
1 tsp. salt
1 1/2 tps. grated onion
1 tbsp. horseradish
1/2 cup mayonnaise
2 1/2 cups leftover diced beef
1 cup chopped celery

Sprinkle gelatin over cold water; let stand 5 minutes; add boiling water and salt, stir until dissolved; chill. When mixture begins to thicken add onion, horseradish and mayonnaise; then blend. Fold in meat and celery. Turn into loaf pan first dipped cold water; chill one hour in electric refrigerator. Serves 4 to 6.

Buttermilk is cheaper than whole fresh milk and it may be used in cooking, or as a substitute for tea and coffee. Its tart flavour is most refreshing on hot days.

* * *

Make a one-dish meal on hot days to prevent the kitchen from becoming overheated. The pressure cooker is a time saver too for such dishes as Swiss steak, chicken stew, curried rice, steamed meat loaf, fish chowder or macaroni and cheese.

Quick dessert: place slices (about 3/4 inch thick) of Pound cake on a baking sheet and spread generously with peanut butter or crushed peanut brittle. Place under the broiling element for 8 minutes. Serve with a topping of whipped cream.

* * *

Cottage cheese is sometimes difficult to make with homogenized milk. Mrs. B. suggests using one cup buttermilk with 4 cups of sweet milk.

* * *

To prevent berry pies from boiling over, use strips of wet cheesecloth or butter-wrapping cut in two inch widths. Press one edge of the strip to the rim of pie plate and let other side fall over fluted pie crust. Overlap ends well.

* * *

Other variations of berry desserts: upside-down cake, berry betty, berry steamed pudding, deep berry pie, berry sponge and others.

* * *

To arrange pansies in an open vase, use a pot cleaner made of stainless copper curls as a flower holder. This can be adjusted easily to fit a small vase, and will provide enough room for the stems.

* * *

Coat hangers make grand ivy trees. Cut hook away from wire hanger, bend remaining wire into circle and fit ends deep into the ivy pot. Twine around the loop.

* * *

To prevent fly specks on pictures, rub glass occasionally with a cloth dipped in vinegar.

* * *

If you're out of silver polish and have to brighten up your tea service in a hurry, use tooth paste. It does a good job on slightly tarnished sterling.

* * *

Old curtain brackets (wooden) make handy hangers for electric cords. Screw a bracket in the wall near your most convenient outlet to keep cords off the work table.

#his and #hat

By The Editor

FROM WASHINGTON comes a report which indicates that the louse is on the run.

To allay any fears at the outset, we hasten to offer the assurance that this is not a piece on personalities, although, at times, we do have our own private meditations concerning certain subversive and anti-British gentry.

Before unfolding our story, it might be well if we had at least a passing conception of the anti-social insect known as the louse. (Circumstances are such that the plural form "lice," is more frequently used.)

In the Encyclopaedia Britannica, in which even a louse rates a mention, it is described as a small, wingless insect parasitic upon mammals and birds and belonging to the order Anoplura. Lice are also described as "flattened creatures with short 3 to 5 jointed antennae (possibly a type of walkie-talkie), eyes reduced or wanting and the tarsi 1 or 2 jointed with claws strongly developed for clinging to their hosts." The eggs, we are advised, are attached to the hairs or feathers and the young lice are active as soon as they emerge. When numerous, it is said, they cause great irritation to their hosts. The Anoplura, it is reported, are divided into two sub-orders viz., Siphunculata or sucking lice, and the Mallophaga or biting lice.

And there you have it. That's a louse. And now, about that report from Washington. It appears that chemical research technicians believe that they have a triple-threat method for ridding the world of this parasitic pest. If their attack is successful it may mean the ultimate disappearance of louse-borne typhus, one of the most dreaded of diseases. The weapon or weapons which scientists have up their sleeves, or in their test tubes, include two new insecticides, chlordane and chlorinated camphene which rank with the bug-killing DDT so far as their de-lousing properties are concerned.

With these three chemicals in their kits, the entomologists are confident the louse

can't develop immunity to all of them. They could be used in combination or singly, and a louse able to take his DDT or leave it alone would be caught up by one of the others.

We trust that these weapons will be effective against all forms of lice which have been plaguing humanity.

* * *

THIS MIGHT, or might not, be the place to make an observation concerning that car which the City of Ottawa presented to Barbara Ann Scott and which she had to return in order to retain her amateur status. When we read about this incident, we began to wonder if all these worthy ladies and gentlemen who have attained provincial and national prominence in softball and hockey circles as "amateurs" had not received any gifts or tokens of appreciation for outstanding performances. It runs in our mind that some of our athletic acquaintances have received handsome tokens of appreciation but apparently they still retain their "amateur" status. That being so, there's something, to our way of thinking, that doesn't add up. Isn't there a proverb concerning flesh and fowl? So far as Miss Scott is concerned, it was our privilege to have seen her, and it is our personal opinion that her grace, skill and charm completely eclipse the commendable attributes of all the world skating queens we have seen at ice carnivals or on the screen. If, as and when she decides to go into movies, we cannot imagine that she will have much, if any, competition, either on or off the ice.

* * *

THERE WAS considerable excitement and discussion in St. Thomas recently when J. W. Peart, manager of the local Public Utilities Commission, attended a luncheon where he met "Rosie." After she had eaten, she waltzed, did a fox trot and joined in the singing of "Sweet Adeline" and then proceeded to brush the dishes off the table. It might be well, at this point, to clear up any misunderstanding

ing or misgivings. "Rosie" is a bear—a very talented bear—that appeared with Bob Hope and Bing Crosby in "Road To Utopia." Along with her owner and trainer, she attended the London Kiwanis Club luncheon in the Hotel London. Said Mr. Peart: "I thought it was a stunt and wondered how a man could make up so realistically as a bear until I looked down and saw the claws on Rosie's paws. Then I realized it was the real thing. She sat up at a table and was fed from a spoon." For a time, no doubt, Mr. Peart must have felt that the situation was almost unbearable.

* * *

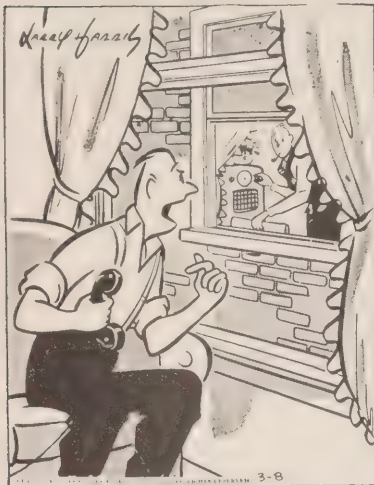
MOST MEMBERS of the great Hydro family know John E. Teckoe, who was manager of the Niagara Falls' Hydro-Electric Commission, and who retired on December 31, 1945, after having completed 33 years' service with Hydro. Hydro News would like to join with his former colleagues and his many friends in extending sincere congratulations and best wishes to Mr. Teckoe and his wife who recently observed their Golden Wedding. Mr. Teckoe's first association with Hydro dates back to January, 1913, when he became superintendent of the Hydro system at Tillsonburg. It was in March, 1921, when he took over the duties of manager at Niagara Falls where he and his wife have resided ever since. John E. Teckoe, Jr., manager of the Galt Public Utilities Commission, is a son.

* * *

NOW JUST a word about the Ontario British Flood Relief Campaign. Dr. Gordon Bates, General Director of the Health League of Canada, has reminded us that all donors should make sure their gift clothing is clean and in good repair, and that the food they donate is of a nutritious type.

"It is important that we do everything in our power to help the British people in their hour of distress" said Dr. Bates. "It is also important that we render this help in a way which will prove most valuable."

Lighter Lines



"Radio poll, Mr. Glotz. What program are we listenin' to?"

When a lady, ignorant of the manifold duties of a university president came to the president of Princeton and asked him to give her son "personal attention," he answered gravely: "Madame, we guarantee satisfaction or return the boy."

The court was impatient. It was the fifth day and the twelfth jurymen was still unconvinced. "Well, gentlemen," said the court officer, "shall I order twelve dinners as usual?" "Make it," said the foreman, "eleven dinners and one bale of hay."



"I got myself your birthday present to me, dear, and you really shouldn't have been so extravagant!"

There are two things to aim at in life: first to get what you want; and after that, to enjoy it. Only the wisest of mankind achieve the second.—Logan Rearsall Smith.

He gave her a look you could have poured on a waffle.—Ring Lardner.

When Bob Hope was on an entertainment tour of Great Britain during the war he saw a British soldier standing beside a winch from which a cable ran straight up into the foggy sky. Curious, but friendly, Hope asked the tommy if there was a barrage balloon at the other end of the cable. The soldier answered: "If there ain't then I'm doin' the bloomin' rope trick."

There comes a time in the affairs of gentlemen when no amount of cursing will suffice. Let us merely observe a moment of silence, like a deaf-mute who has just hit his fingers with a hammer.—John Barrymore.

A visiting archbishop had preached an eloquent sermon on the beauties of married life. Two Irish women, as they came out of church, were heard to comment on the discourse.

"Sure, 'tis a fine sermon his riverence is after given' us."

"Indeed it is," said the other, "and I wish I knew as little about the subject as he does."

The measure of a man's real character is what he would do if he knew he would never be found out.—Macaulay.

The teacher was having a hard time with Antonio's grammar.

"If I say 'I have went', it is wrong, isn't it, Antonio?" she asked patiently.

"I guess maybe it is, teacher", he agreed cautiously.

"Why is it wrong?"

"Because you ain't went yet," he said.

It is always the best policy to speak the truth, unless, of course, you are an exceptionally good liar!—Jerome K. Jerome.

Thrusting my nose firmly between his teeth, I threw him heavily to the ground on top of me.—Mark Twain.



"I must write a composition on insects, Dad— Mom sent me to you!"

A visitor to Dublin asked a policeman the way to the castle. He was down at the docks at the time and the policeman answered: "Well, if I wanted to get to the castle I wouldn't start from here at all."

A small girl was taken during her school holidays to the Natural History Museum. That evening her father asked her if she had enjoyed herself.

"Very much, daddy," said the child, "Mummy took me to a dead circus."



"Now are you satisfied that it isn't peppermint?"

ST. THOMAS

(Continued from page 19)

ated as a village in 1853. To celebrate this occasion, horse races were held on the town track which was located on what is now main street.

With the inauguration of Hydro service, a transformation took place in the life of the community and today, records show that power is being supplied to 4,803 domestic users, 608 commercial customers and 87 industrial firms. Approximately 231 miles of distribution lines are maintained by the Public Utilities Commission.

Public Utilities

Electrical service was under the jurisdiction of The Committee of City Council until 1914 when the Public Utilities Act made provision for the local Hydro-Electric Commission to be formed. The members of the first commission were Lieut.-Col. W. J. Green, the late W. K. Sanderson and mayor M. B. Johnston. This machinery for Hydro government carried on until 1935 when the citizens voted to have all the utilities administered by one board and so the Public Utilities Commission was formed.

The present commission comes under the able direction of J. W. Peart who is general manager and secretary-treasurer. The chairman is Ernest E. Seger and the present commissioners are George D. Lang, R. B. Bowey and Percy R. Locke, a past president of district No. 7 of the O.M.E.A., and mayor J. B. Caldwell.

The Railway City

St. Thomas is appropriately known as The Railway City. Five internationally-known railways, Canadian National, Canadian Pacific, Pere Marquette, Wabash and the New York Central as well as the Michigan Central, along with the London and Port Stanley electric radial, have their terminal points there. Here, also, are the shops for two of the American lines which, under international agreement, must do a percentage of their repair work in the local shops for every mile their coaches travel in Ontario.

The Times-Journal

The first newspaper in the district was the St. Thomas Journal, which was originally published in 1831. It was edited by three brothers, Thomas, Aylmer and George Hodgkinson. The following year an opposition paper, known as the "Liberal," appeared and it was in this paper that the editorials of William Lyon McKenzie, who was attacking the Family Compact, were published.

The early papers carried few paid advertisements and it was not uncommon to read about a merchant carrying a full supply of tanner's oil, 6,000 barrels of salt or 20 tons of grindstones.

The Times was established in 1873 and

among its editors was the late John W. Eedy who died recently in St. Marys. However, no paper has ever received the support or has maintained such a high standard as the present Times-Journal, which is edited by Thomas Keith. This paper maintains a big city style of journalism and is recognized as a credit to the residents of the community.

School Days

The substantial, well-equipped and architecturally pleasing schools in the town today are a far cry from the early private schools which flourished prior to the turn of the century. It was in 1890 when the first board of education was established and a system of free schools inaugurated. As the city is only a few miles out of London, students attending Western University are able to commute on the L. & P.S.

Alma College, a residential school for girls, was opened in 1881 and since that time has had an enrolment from every part of the world. The buildings themselves seem to add a breath of old world charm to the busy community.

Perhaps the greatest educational campaign ever carried on under one roof took place just outside the city limits. When the war began, The Royal Canadian Air Force requisitioned the fine Ontario hospital building for a Technical Training School and most ground crew airmen as well as flight engineers called St. Thomas "home" for a few months.

With the increase in population in the past decade and the coming of new industries, the city has kept pace in the economic march of Ontario and its citizens face the future with optimism.

WANTON DESTRUCTION

(Continued from page 10)

by York spring water, which is said to enjoy a wide reputation on account of its refreshing and invigorating qualities. When the boys come out of this stimulating bath, they are apparently unable to resist the temptation of taking a pot-shot at the transformer towering above them. At any rate, last fall, before the swimming pool was "passed up" for the year the boys gave it some farewell attention. Two transformer bushings and two lightning arresters were broken. The trouble was cleared, but one of these days, when the material is available, complete restoration of the broken equipment will have to be effected by the commission at considerable expense.

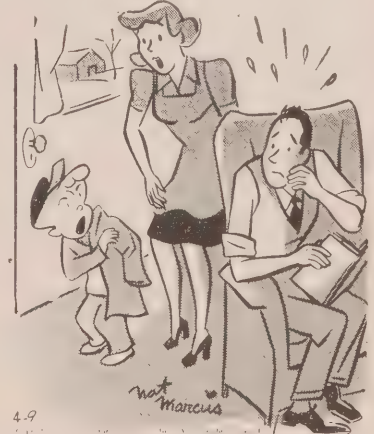
Most motorists have noticed the hooded light standards on Hogg's Hollow bridge. Over this structure a good deal of the heavy traffic from the north finds a time-saving cut-off into Toronto. Many who traverse the bridge at night have no

doubt wondered why the lights are always covered and never permitted to shine. There is a good reason for that. Every light on the bridge was broken quite a long time ago and it has been impossible for the North York commission to get suitable replacements. While waiting for the day when material may be available again, covers have been placed to prevent rain and snow getting down to the cables through the empty sockets and causing short circuits.

In the residential sections of North York, and especially where the streets dovetail into the city, considerable damage has been done to 10-inch lighting globes. As these cannot be readily replaced, the commission has been forced to standardize on 6-inch globes.

When you ask Hydro Municipal Commission personnel what is being done to exercise some control over these juvenile outbreaks which are causing so much damage, inconvenience and expense, they shake their heads. Frankly, they are puzzled as to how the situation should be handled. Letters to parents and teachers have apparently had little effect. The files of Hydro municipal commission are cluttered with copies of appeals sent out to them.

One man summed things up this way: "Everybody knows that boys will be boys and that there is a streak of mischief in every boy who is worth his salt. On the other hand, a boy's thoughtless impulses must be corrected. If he is allowed to get away with everything he feels like doing, he is liable to get completely out of hand and to develop along lines that are anything but conducive to his becoming a good type of citizen. Every healthy boy likes to consider himself a good sport. He likes to play the game. He must be taught somehow to realize that in destroying street lighting he is not playing the game; that he is acting against the best interests of his own people, his own neighborhood and himself.



"Why can't Pop run errands for the lady next door? I heard him say he could go for her!"

MID HYDRO SORCERIES

(Continued from page 8)

flesh to the bone. As proper precautions are, however, almost invariably taken, there are few serious accidents.

The copper shell is placed face downwards on a pan or trap and the molten metal poured over the back and allowed to solidify. It passes through a series of finishing operations—planting, routing the blanks, bevelling and mounting on wood—and is then ready for the press. The same processes are entailed when copper is "grown" on a lead instead of a wax mould.

Other processes associated with the photo-engraving industry are concerned with the making of mats and stereos. A mat is a sheet of papier mâché on which the impression of engravings of letterpress is impressed. Hydraulic machines, capable of exerting enormous pressure are engaged in this task. Stereos or metal plates, either flat or curved, can readily be made from these mats and are exclusively used in high-speed newspaper printing.

As we pass out to the street we pause for a moment, half expectantly—for our cars have been attained for the roar of a thousand power-driven presses throughout the length and breadth of Ontario which will carry on with the story from where the photo-engravers leave off.

EXCELLENT SUPPORT FOR EMPLOYEE CHEST

While final figures are not yet available, the plan for contributing to vital social welfare and charitable services through the Canadian Employee Chest is reported to be receiving excellent support from Hydro personnel. Hundreds of cards have already been filled in and the committee is counting upon still more employees availing themselves of the opportunity afforded for convenient and systematic giving on a scale that, in the aggregate, will ensure substantial support for a worthy cause but, individually, represents a negligible deduction from income.

It is pointed out again that employees, by agreeing to a regular deduction from their pay check of an amount equivalent to their earnings for only a quarter of an hour each week, are greatly assisting in the budgeting of important welfare programmes while avoiding the embarrassments and inconveniences of many charity canvasses and "on-the-spur-of-the-moment" giving.

HONOUR FRANK TAYLOR: 36 YEARS WITH HYDRO

Presentation Made To Retiring First Operator At Stratford

In testimony of their good-will and esteem, some 75 members of Hydro's operating staffs in the Niagara, Western and Toronto areas gathered recently at a farewell banquet given in honour of Frank Taylor, first operator at Stratford, who is retiring after 36 years of continuous service.

No less than 16 speakers, exclusive of the chairman, L. E. Evoy, chief operator at Stratford, and the vice-chairman, E. M. Cameron, station maintenance foreman for the district, voiced the sentiments entertained for Mr. Taylor by all those who have had business or personal contacts with him during his long period of service with the Commission. Among the

speakers were J. F. Edwards, M.P.P., and J. S. Lotimer, representing Hydro operating headquarters at Toronto in the absence of H. J. Muehleman, who sent a congratulatory letter and expressed his regrets at being unable to attend.

Mr. Taylor recalled some of the amusing experiences in the operating field in the early days. He expressed his gratitude to all those who had assembled to honour him on the occasion of his retirement and said that he would always regard the many years spent actively with Hydro as the happiest of his life.

J. W. Wimpory, chief operator of the Hamilton district, was called upon to present Mr. Taylor with a wallet and a gift of money, while Mrs. Taylor was the recipient of a large bouquet of roses. A musical entertainment and a magician's show rounded out the programme.



THIRTY-SIX YEARS continuous service with Hydro seem to have left no visible signs of wear and tear on Frank Taylor, retiring first operator at Stratford, who is seen enjoying a farewell banquet, which was attended by 75 Hydro associates. J. W. Wimpory of Hamilton is on Mr. Taylor's left. On his right are L. E. Evoy, Stratford, Chairman; J. S. Lotimer, Toronto, and D. B. Ireland, Owen Sound. Standing is G. T. Brown of Burlington.

INSECT PESTS

(Continued from page 13)

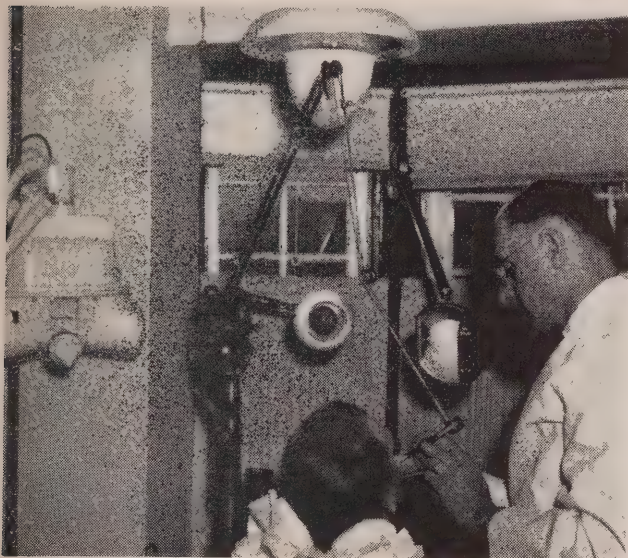
pellents of one sort or another. Recently however, experience gained in the war in the East, has been utilized, and last year a number of formulae found useful during the war were tried out. They were received favourably on the whole, but it was felt that further improvements were possible. This year, a formula known as 6-2-2 is being supplied. It is a liquid containing three substances which are said to provide protection for from three to five hours, from mosquitoes, black flies, sand flies, etc. It is dispensed in pint bottles and is to be issued to the individual in tin containers with sponge,

with which you are all familiar. About 10 to 15 drops of the liquid is to be massaged into the skin of the face, neck, ears and arms. It may be applied lightly to portions of tight fitting clothing where mosquitoes and flies are capable of biting through the fabric. The substances are harmless to man when used as directed. They will produce discomfort if they get on the eyelids or in the eyes. They will soften plastics and varnished or lacquered surfaces. If this proves as effective as it is reported to have been in the East, it will go far to relieve the discomfort of working in the bush.

The H.E.P.C. medical section would appreciate reports as to its effectiveness under varying conditions.

HYDRO AT WORK

HELPING THE DENTIST



If you are one of those people who think that a trip to the dentist is a harrowing experience, ask any old-timer what it was like before the days of Hydro.

To begin with, the most dreaded instrument the dentist uses is the drill. With Hydro, a steady, even speed is maintained but fifty years ago the operation was done by means of a foot treadle with the dentist using one hand to guide the drill and the other hand to hold the patient.

Then there is the important matter of lighting. In the above picture, the operator is using two spot lights to focus on the offending tooth and an indirect light overhead which illuminates his cabinets and trays without causing eyestrain to the patient.

With an X-ray machine in most offices, the dentist can quickly diagnose the condition of a tooth and ascertain if extraction is necessary. Hydro also plays many other important roles in the office of the modern dentist. For instance, there's the electric sterilizer and also the equipment used in making and repairing dentures.

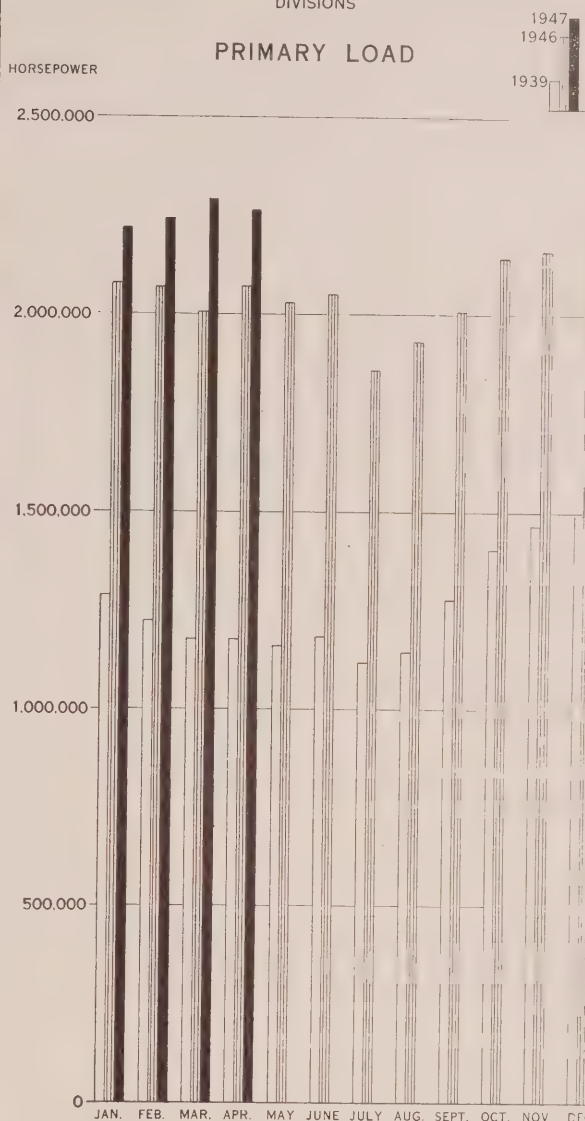
Small electric furnaces are used by dentists for melting gold and other metals required in making gold inlays. By means of centrifugal force, the molten metal is packed into the plaster impression of a patient's gums.

Only the finest of abrasives are used for polishing off a rough tooth or denture. To accomplish this, the dentist uses an electric hand drill, which responds to the lightest touch. Generally, it is the same instrument that is used to polish, drill, and shape teeth and for other operations in a dental surgery.

SOUTHERN ONTARIO SYSTEM

EMBRACING NIAGARA, GEORGIAN BAY AND EASTERN ONTARIO DIVISIONS

PRIMARY LOAD



PRIMARY LOADS

AREA SERVED BY	MAXIMUM 20-MINUTE PEAK H.P.		PER CENT INCREASE
	APRIL, 1947	APRIL, 1946	
SOUTHERN ONTARIO SYSTEM...	2,262,905	2,073,743	+ 9.1
THUNDER BAY SYSTEM	142,091	131,233	+ 8.3
NORTHERN ONTARIO PROPERTIES	241,606	196,156	+ 23.2
TOTAL	2,646,602	2,401,132	+ 10.2

PRIMARY AND SECONDARY LOADS

SOUTHERN ONTARIO SYSTEM...	2,265,050	2,161,249	+ 4.8
THUNDER BAY SYSTEM	149,464	153,753	- 2.8
NORTHERN ONTARIO PROPERTIES	312,182	272,657	+ 14.5
TOTAL	2,726,696	2,587,659	+ 5.4

MUNICIPAL LOADS, MARCH, 1947

SOUTHERN ONTARIO SYSTEM NIAGARA DIVISION (25-Cycle)

	H.P.	Domes- tic Con- sumers		H.P.	Domes- tic Con- sumers		H.P.	Domes- tic Con- sumers
Acton	2,025	544	Erieau	179	197	Palmerston	816	400
Agincourt	271	168	Erie Beach	18	79	Paris	2,514	1,215
Ailsa Craig	151	147	Essex	705	528	Parkhill	318	315
Alvinston	189	205	Etobicoke	14,599	6,157	Petrolia	1,130	825
Amherstburg	1,342	734	Exeter	1,018	544	Plattsville	219	118
Ancaster Twp.	526	394	Fergus	1,665	770	Point Edward	1,965	349
Arkona	92	117	Fonthill	262	300	Port Colborne	2,522	1,655
Aurora	1,711	793	Forest	715	510	Port Credit	1,213	649
Aylmer	1,405	758	Forest Hill	9,211	3,567	Port Dalhousie	1,214	691
Ayr	287	227	Galt	14,372	4,296	Port Dover	631	750
Baden	705	168	Georgetown	2,692	833	Port Rowan	167	171
Beachville	916	167	Glencoe	271	230	Port Stanley	482	825
Beamsville	712	399	Goderich	1,992	1,361	Preston	4,951	1,689
Belle River	323	314	Granton	94	85	Princeton	191	98
Blenheim	921	560	Grimsby	1,160	655	Queenston	161	81
Blyth	145	184	Guelph	15,280	5,703	Richmond Hill	728	414
Bolton	300	172	Hagersville	968	406	Ridgetown	723	599
Bothwell	189	185	Hamilton	175,150	43,700	Riverside	1,812	1,559
Brampton	3,981	627	Harriston	560	378	Rockwood	161	174
Brantford	26,242	8,337	Harrow	767	350	Rodney	225	239
Brantford Twp.	2,204	1,476	Hensall	220	210	St. Catharines	32,484	8,742
Bridgeport	322	178	Hespeler	3,596	825	St. Clair Beach	131	102
Brigden	175	125	Highgate	126	107	St. George	222	154
Brussels	285	256	Humberstone	740	738	St. Jacobs	413	141
Burford	318	235	Ingersoll	3,944	1,568	St. Marys	2,160	1,076
Burgessville	107	64	Jarvis	209	163	St. Thomas	9,856	4,718
Burlington	2,101	1,234	Kingsville	872	641	Sarnia	8,696	5,403
Burlington Beach	625	732	Kitchener	35,895	8,718	Scarborough Twp.	7,382	5,950
Caledonia	579	452	Lambeth	200	140	Seaforth	1,179	524
Campbellville	63	50	LaSalle	335	259	Smithville	421	185
Cayuga	275	186	Leamington	2,462	1,688	Simcoe	3,408	1,678
Chatham	9,221	4,575	Listowel	1,851	801	Springfield	133	133
Chippawa	472	364	London	49,979	19,859	Stamford Twp.	4,124	2,497
Clifford	146	130	London Twp.	678	494	Stoney Creek	359	289
Clinton	889	593	Long Branch	2,005	1,564	Stouffville	592	408
Comber	170	120	Lucan	246	186	Stratford	8,508	4,561
Cottam	123	131	Lynden	144	105	Strathroy	1,729	876
Courtright	79	91	Markham	460	350	Streetsville	600	208
Dashwood	126	102	Merlin	147	124	Sutton	341	468
Delaware	107	71	Merritton	11,234	962	Swansea	3,762	2,096
Delhi	934	609	Milton	1,852	555	Tavistock	730	300
Dorchester	158	157	Milverton	520	263	Tecumseh	544	711
Drayton	149	167	Mimico	4,059	2,306	Thamesford	152	147
Dresden	599	466	Mitchell	896	521	Thamesville	301	243
Drumbo	114	90	Moorefield	105	56	Theford	152	166
Dublin	73	61	Mount Brydges	146	166	Thorndale	136	83
Dundas	3,779	1,458	Newbury	55	70	Thorold	3,980	1,274
Dunnville	1,673	1,063	New Hamburg	800	384	Tilbury	1,246	502
Dutton	324	234	Newmarket	2,427	1,022	Tillsonburg	2,243	1,243
East York Twp.	13,047	11,918	New Toronto	12,966	2,029	Toronto	429,249	154,302
Elmira	1,895	554	Niagara Falls	13,044	4,984	Toronto Twp.	5,073	3,065
Elora	578	355	Niagara-on-the-Lake	870	623	Wallaceburg	6,165	1,387
Embro	196	125	North York Twp.	14,994	7,019	Wardsville	70	65
			Norwich	570	391	Waterdown	327	280
			Oil Springs	216	104	Waterford	610	397
			Otterville	157	143	Waterloo	7,931	2,306
						Watford	610	312

MUNICIPAL LOADS, MARCH, 1947

	H.P.	Domes- tic Con- sumers		H.P.	Domes- tic Con- sumers		H.P.	Domes- tic Con- sumers
Welland	12,670	3,264	Neustadt	49	110	Iroquois	351	279
Wellesley	152	137	Orangeville	1,077	746	Kemptville	523	393
West Lorne	527	227	Owen Sound	8,570	3,663	Kingston	20,604	7,867
Neston	6,382	1,700	Paisley	188	202	Lakefield	555	360
Wheatley	333	237	Penetanguishene	1,386	773	Lanark	142	173
Windsor	61,745	26,609	Port Carling	137	211	Lancaster	69	116
Woodbridge	882	314	Port Elgin	591	509	Lindsay	4,149	2,289
Woodstock	9,829	3,448	Port McNicoll	147	241	Madoc	304	318
Wyoming	203	166	Port Perry	380	381	Marmora	186	249
York Twp.	26,454	21,946	Priceville	19	38	Martintown	61	56
Yurich	150	149	Ripley	193	129	Maxville	140	176
(66 2/3-Cycle)			Rosseau	40	58	Millbrook	156	182
Monte	205	244	Shelburne	344	314	Morrisburg	487	444
Nakville	2,110	1,285	Southampton	614	567	Napanee	1,824	897
Nafalgar Twp.	834	573	Stayner	326	341	Newcastle	300	230
GEORGIAN BAY DIVISION			Sunderland	124	140	Norwood	251	242
(60-Cycle)			Tara	171	164	Omeme	289	173
Aliston	550	447	Teeswater	228	233	Orono	146	183
Arthur	220	199	Thornbury	83	257	Oshawa	22,945	6,765
Bala	121	336	Thornton	44	67	Ottawa	45,805	15,658
Birrie	5,639	2,471	Tottenham	141	161	Perth	2,155	1,110
Baverton	295	331	Uxbridge	436	423	Peterborough	20,930	6,702
Beton	123	148	Victoria Harbour	126	271	Pictou	1,792	1,336
Badford	466	291	Walkerton	1,264	687	Port Hope	3,284	1,455
Bechin	61	53	Waubashene	123	235	Prescott	1,596	815
Birmingham	270	262	Warton	468	437	Renfrew	1,039	1,366
Batsworth	126	108	Windermere	28	64	Richmond	123	85
Besley	765	456	Wingham	965	560	Russell	130	119
Bidwater	202	159	Woodville	127	116	Smiths Falls	4,258	2,012
Billingwood	2,845	1,650	EASTERN ONTARIO DIVISION			Stirling	390	293
Bokstown	123	119	(60-Cycle)			Trenton	5,901	1,833
Bomere	168	176	Alexandria	379	415	Tweed	359	321
Bondark	256	210	Almonte	652	689	Warkworth	91	135
Bomham	500	464	Apple Hill	44	66	Wellington	265	343
Bovale	225	191	Arnprior	1,729	891	Westport	153	149
Bowood	125	72	Athens	154	183	Whitby	1,867	1,054
Bherton	97	126	Bath	64	64	Williamsburg	122	86
Band Valley	170	184	Belleville	9,338	3,939	Winchester	537	309
Bivenhurst	1,491	593	Bloomfield	147	181	THUNDER BAY SYSTEM		
Blover	1,735	850	Bobcaygeon	83	409	(60-Cycle)		
Bstein	24	63	Bowmanville	3,714	1,234	Fort William	17,659	7,332
Btsville	1,546	744	Braeside	284	92	Nipigon Twp.	341	243
Bardine	1,055	741	Brighton	597	563	Port Arthur	21,751	6,099
Bfield	27	37	Brockville	8,924	3,101	NORTHERN ONTARIO		
Bnow	511	287	Cardinal	396	394	PROPERTIES		
BleTier	156	128	Carleton Place	2,250	1,076	Nipissing District		
Bckdale	217	231	Chesterville	469	248	(60-Cycle)		
Bford	1,032	757	Cobden	174	160	North Bay	5,784	3,379
Band	4,459	1,625	Cobourg	3,030	1,443	Patricia District		
Bimay	207	184	Colborne	319	285	(60-Cycle)		
Bnt Forest	643	502	Deseronto	319	395	Sioux Lookout	420	512
			Finch	119	107	Sudbury District		
			Frankford	234	262	(60-Cycle)		
			Hastings	201	238	Capreol	574	344
			Havelock	273	295	Sudbury	12,429	8,734



HE'LL NEED FORESTS TOO!

If you look to the bush country for recreation or business, you'll realize how much it will mean to the youngsters of today if you help to save the forests for tomorrow. Above all, protect the forests from fire.

Ontario has been abundantly blessed with natural resources, which, if not properly protected, can be quickly exhausted. Every year, for example, thousands of acres of trees are destroyed because someone is not careful with fire.

Forests mean much more than a pleasant place to holiday . . . an attraction for tourists . . . shelter for game animals and fishing haunts. They mean more than a source of lumber and paper products, and jobs for thousands of people, vital as these are to national welfare.

Climate is tempered—extremes prevented—by forest areas. They store water too—help to keep rivers and streams from dangerous and costly flooding in spring time. They spread the flow of water more evenly through the year. That means they help to ensure a year-round supply of Hydro power for you.

Protect the forests. They serve you well.

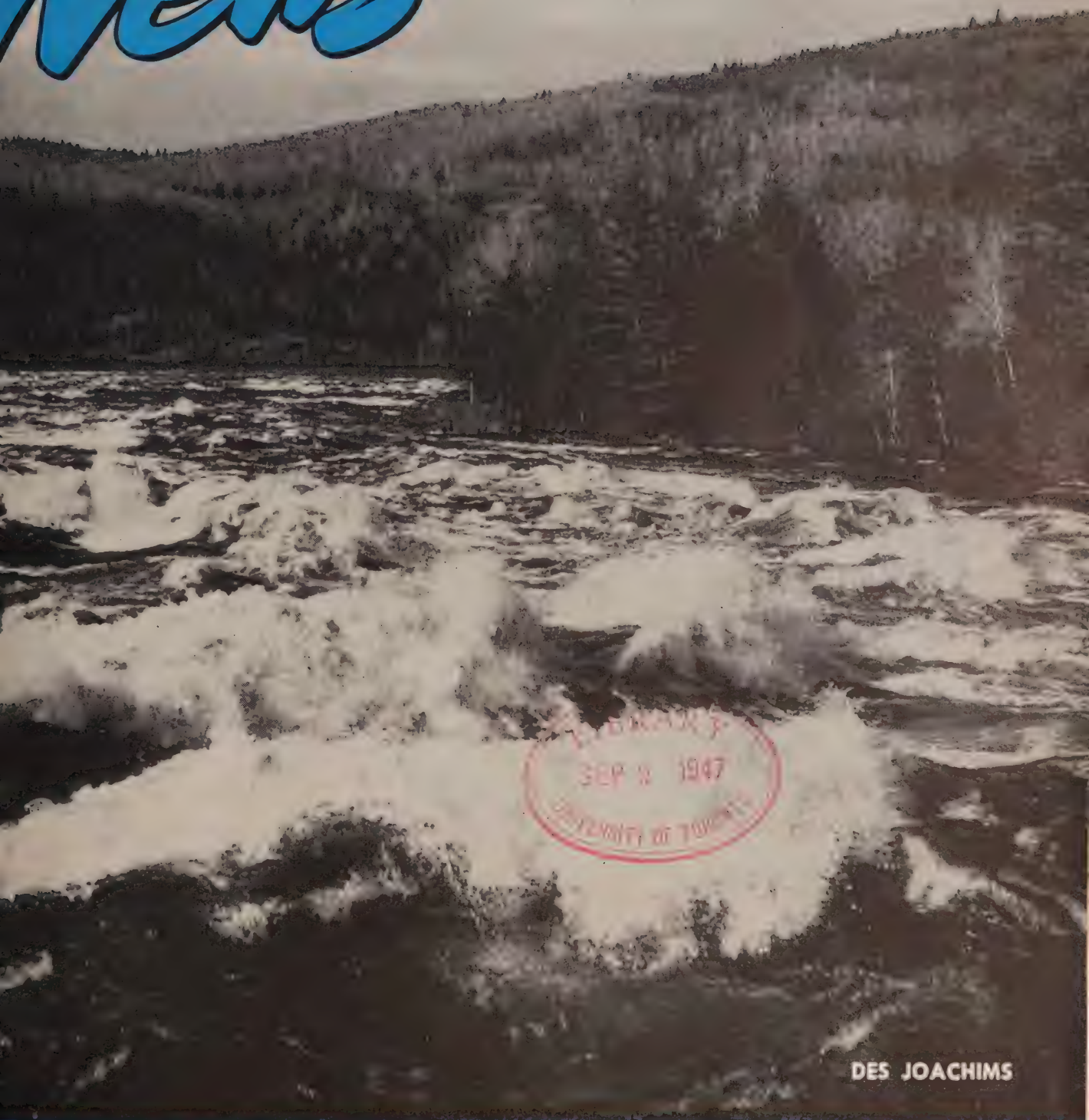
SOME WAYS TO BE CAREFUL ABOUT FIRE

- Break each match in two before you throw it away.
- Be sure your discarded cigarette is really out.
- Keep camp fires small, and always in a safe place.
- Before you leave, put the fire DEAD OUT with water.



THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

HYDRO *News*



SEP 2 1947
UNIVERSITY OF TORONTO

DES JOACHIMS



It's . . . smart to play safe!


TEACHERS . . . PARENTS . . . CHILDREN . . . real danger threatens children who play too close to Hydro lines and transformer stations. A kite catches in the wires and someone is tempted to climb a pole after it . . . or a ball goes over a Hydro fence, and some adventurous lad undertakes to get it back. Too often such missions result in contact with a live wire . . . and that means severe burns that may well prove fatal.

The only safe way is to keep clear of Hydro wires and installations.

Hydro takes every possible safety precaution; but once in a while someone gets careless or takes a chance, and injury results. Hydro can only warn, and seek co-operation of parents and teachers and all who have influence with those who might expose themselves to danger.

Children should be warned:

- Never to fly kites near Hydro wires.
- Never to climb poles.
- Always to stay away from distribution lines and transformer stations.
- Always to keep away from fallen wires.
- Not to break street lamps . . . they are for public safety.
- Not to break insulators . . . a broken insulator can cause loss of service and heavy damage.



After all, "Safety First" is still a good motto. It's smart to play safe.



DON'T BREAK
STREET LAMPS

THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO



THE HYDRO - ELECTRIC POWER COMMISSION OF ONTARIO

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THE FRONT COVER



HALFWAY between Pem-
broke and Mattawa along the
course of the Ottawa river, the Des
Joachims rapids swirl in a mighty
tumult that is made to order for
power developments. In the vicin-
ity Ontario Hydro will construct a
generating plant which, when all
eight units are in operation, will
have a capacity of 480,000 horse-
power. In providing a suitable
head for this development lands
adjacent to the river will be flooded
for a distance of 60 miles upstream,
and sections of the main line of the
Canadian Pacific Railway and of
No. 17 highway are already being
located. It is expected that three
of the new station's generating units
will be brought into service in 1950.

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CONTENTS

	Page
Toronto's Skyline - - - - -	2
Page Three - - - - -	3
Hydro's Skilled Foresters - - - - -	4
Newsmen Get First-Hand Impressions - - - - -	7
Acton - - - - -	11
Come Into The Garden - - - - -	14
Hydro Album - - - - -	16
City Lights - - - - -	18
Generator Heavier Than Locomotive - - - - -	20
Lady Recognizes Home In Hydro News' Cover - - - - -	22
Around The Hydro Circuit - - - - -	23
Des Joachims Pictures - - - - -	24
In The Editor's Mail Bag - - - - -	26
Holiday Hazards - - - - -	27
This And That - - - - -	28
Hydro Home Forum - - - - -	29
Lighter Lines - - - - -	31
Photographs From Readers - - - - -	32
Hydro At Work - - - - -	33
Monthly Load Summary - - - - -	33





Picture of the Month

THIS IS how Toronto looks from the roof of the 18-storey Commission Administration Building on University Avenue, facing south. The photograph was taken by Burt Helling of the Commission staff. A story on the flag is to be found elsewhere in this issue.

OUR WEEKLY PAPERS

THIS year's awards in the Ontario-Quebec division of the Canadian Weekly Newspapers Association again call attention to the important role the weekly paper is playing in the journalistic field.

As is customary, three newspapers have been selected for special recognition. This time the Fort Erie Times-Review, edited by E. W. Johnston, wins the Legge memorial trophy for the best editorial page of any English language weekly in Ontario or Quebec. The Stouffville Tribune, whose editor is Charles Nolan, receives the Joseph T. Clark memorial trophy for the best all-round paper in a town or village with a population of 15,000 or less. To the Bowmanville Canadian Statesman—George James, editor—goes the E. F. Stephenson memorial trophy for the newspaper with the best front page.

In spite of the fact that editions of city newspapers can be delivered to any community in Ontario within a few hours after they come off the presses, the weekly paper, in most localities, would seem to be more than holding its own. There are good reasons for this. People will always be more interested in what is going on in their immediate vicinity than in events in far-off places, and the local paper is now, as it has always been in the past, a mirror of the life of the community it serves. It has adopted many of the syndicated features of the daily press to widen its reader interest, and its appearance has been improved by the introduction of modern printing methods.

In the larger towns there has been a tendency towards increased specialization and many of the larger weeklies have a business and advertising manager, a composing room foreman, linotype operators, clerks and reporters almost on the scale of a small city daily. With this expansion editorials have been apt to follow more and more the lines of leading articles in the daily press, so that when awards are made such as that to the Fort Erie Times-Review it actually means that adjudication has been made on the same "points" that would govern a competition among city newspapers.

The editor of a small weekly newspaper is in an altogether different position. Generally he has to do a little of everything about the printing shop as well as collecting the bills. He does, however, meet practically every one of his readers—a privilege denied to his confrere in the larger town—and, through close contact with the vagaries of human nature as exemplified in his community, he often invests his somewhat less erudite and

more narrowly-ranged editorials with a sort of genre quality that is singularly free of extraneous influences.

Obviously, this type of editorial, which has a charm of its own, must be judged by different standards and it is gratifying to note that in the national awards which follow the provincial awards, provision is made for recognition of the best editorial page shown by these smaller weekly newspapers. This kind of writing certainly has a place of its own. It may be a little faulty judged by academic standards, but it brings the sweet breath of tilled fields, and haying and harvest home to a world which seems woefully in need of such things.

BRING OUT THE FLAGS!

IF you are one of those who like to hang high the garlands and stage a celebration on all possible occasions, we would like to recommend the month of July. During its thirty-one days the choice is wide and varied. If you have a patriotic turn of mind you can have your choice between the anniversary of our own Dominion and that of our good neighbour to the south.

But one of the most pleasant anniversaries, and one which few people know about, takes place on July 22nd. All those who have an appetite for a good mystery story should hoist a special flag on that day, for five hundred and seventy-one years ago an episode took place which laid the foundation for one of the best known and best loved stories ever told. It goes something like this:

A certain town in central Europe was having a bad time with rats, and one hot July day a mysterious stranger turned up and offered to get rid of the rats for a good-sized sum of money. The city-fathers, being a hard-headed lot, told him to go ahead for they didn't dream for one minute he could do it. But he proceeded to bewitch every rat in the city into drowning itself in the river and then he came back for his money. Everyone knows what happened. The city fathers hurriedly denied ever having made a contract and refused to pay him. Whereupon he left the town hall without a word and later that day every child in the town disappeared under the most curious circumstances. The city fathers wept and tore their hair and hired the equivalent of the best private detectives of the day. But not one trace of the children was ever found. A little lame boy, the only survivor, swore he had seen a mountain open and the children dance inside to the tune of the stranger's pipe, but no one actually believed him. The fate of the children has remained, what we choose to call today, a baffling mystery.

HYDRO'S SKILLED FORESTERS GUARDIANS OF 250,000 TREES

**Play Important Role In Maintaining Power Service — Required To Spend
Good Deal Of Time Out On A Limb — Hydro News Sees Crews At Work**

**By Harry M. Blake,
Hydro News**

In the maintenance of Hydro power services throughout Southern Ontario engineers enjoy the close co-operation of the Commission's tree surgeons who keep a watchful eye on some 250,000 trees in making periodic check-ups on 6,000 miles of low and high tension transmission lines as well as on 2,700 miles of rural line built along the King's highways. Fully equipped and thoroughly trained for their work, these Hydro foresters, in addition to carrying out routine line clearance operations, are always ready for a "hot spot" or emergency call from the operating department, whose busy patrols may have noted a dangerous tree in proximity to a power line.

Serious power leakages may be caused by the contact of trees and branches with the conductors. Arcing may even start fires in both trees and Hydro poles. While high tension lines as well as rural lines are protected as well as possible against this kind of trouble by devices which automatically close off circuits when interference occurs, falling trees may cause heavy material damage, although any kind of contact is temporarily disturbing to the system of regulated power supply.

While the construction of Hydro transmission and distribution lines is invariably accompanied by adequate line clearing operations, as time passes, new growth develops on the margins of right-of-ways and along the roads followed by transmission lines and rural power circuits. Often old trees regarded as "safe" when the lines were put through show signs of disease and of becoming a menace. Once again clearing operations become necessary.

Power lines, once built, become the charge of the operating department insofar as maintenance is concerned, and, since its creation in 1930, Hydro's forestry service has been entrusted with many important line clearing jobs.

Fifteen Forestry Crews

At the present time, fifteen crews, operating from strategic centres, cover Southern Ontario, attending promptly to those trees which have already become a hazard and noting growth which may

become a menace in the future. Frequently, the forestry branch of the Commission is also called upon to perform line clearance jobs in Hydro municipalities.

Routine operations are planned well in advance, since it is necessary to secure the permission of the Provincial Government or the township or county authorities for the removal or pruning of trees lining right-of-ways, highways and roads, while arrangements must be made with the farmers or landowners with respect to trees growing on their properties. Often a blanket permission for pruning and removals is obtained for sections of highway where the growth suggests continual trouble. In all operations every effort is made to preserve the natural beauty of the surrounding countryside.

Training Of Recruits

When the forestry branch was formed, the Commission appointed W. Ray Hunter as its superintendent. Mr. Hunter gathered together a small staff of specialists in this type of work, and two instruction camps were set up for the training of recruits. When organization had been completed and a sufficient number of men trained, these camps were discontinued, since further enlistments were on an individual rather than on a group basis. Should there be a further development of the forestry service—as would seem likely in view of Hydro's general expansion—it is understood that there will be a reversion to the training schools which were conducted on similar principles to the schools recently set up for Hydro linemen, and a standard curriculum will be drawn up by headquarters. At the present time, recruits are assigned to one or another of the fifteen forestry crews and receive their instruction from experienced foremen, who are required to submit reports at regular intervals on the progress of the trainees.

Safety First — Always

As he will be required to spend a good deal of his time out on a limb, a recruit in the Commission's forestry department must learn not only how to get up there and how to get down but also how to secure himself while he is working on his often lofty perch. He must become as familiar as a sailor—and we mean

the real hard-bitten salt of sailing-ship days—with the use of ropes. Until he can make every knot required in his very "knotty" business, he remains on the ground or must content himself with handing saws, pole pruners and other cutting tools to his more experienced fellows from the solid rungs of a Sitka spruce ladder. Safety first is the rule for this as for all other Hydro jobs. Absolutely no chances are taken.

Safety ropes specified by the Commission are long-fibre first-grade manilla weaves, one half-inch in diameter and 100 feet in length. Whenever, as during the war—they are unobtainable, only hems which have passed the Commission's strict laboratory tests may be substituted. When the various uses of this strong and flexible equipment have been mastered, a man is as safe in a towering tree as he would be on the ground. The rope not only ensures him against the danger of falling, but properly adjusted, it anchors him to the trunk or sturdy branch of a tree and enables him to work out on limbs that might crack or break under the impact of his unrelieved weight. The rope is also cleverly employed to provide him with a seat or to improve his stance so that he can concentrate all his attention on the job in hand.

Hydro News was invited to see forestry crews at work on Highway 7-A in the Uxbridge-Port Perry district and on Highway No. 6 between Hamilton and Caledonia.

The Commission's 22,000-volt lines in the Port Perry district are being re-insulated to carry 44,000-volt current. There is also new line construction coming through from Oshawa. Forestry crews were working ahead of these line jobs, pruning and removing trees along the highways.

When Hydro News arrived, two men with long-handled pole pruners were working in the tops of a good-sized maple. Their heads and torsos were silhouetted against the sky. Now and again they shifted their positions as easily as if they had been walking on a plank platform instead of on the rounded, slippery limbs of a tree.

"It's all in the way they've learned to handle their ropes," W. J. Kinnear, the

(Continued on page 6)



HYDRO'S POWER saw is being brought into play to facilitate the removal of a diseased elm on the Hamilton-Caledonia highway. Sub-foreman Russell Joyce and his team-mate Jack Mercer, who cover all sections of Southern Ontario with this powerful equipment, are making a notch cut at the base of the trunk. Between the incisions the wood will be chopped out with a fireman's axe, leaving a ridge to prevent the tree from jumping when it is felled by a deeper cutting on the opposite side.

HYDRO FORESTERS are guying a "suspect" tree. The poplar shown is one of two healthy trees to which cables are being attached to preclude any possibility of their diseased brother falling under the lash of a severe windstorm before the "doctor" can get around to him and properly diagnose his ailment. Securing the cable to the sound tree through an eyebolt is Donald McMullen. Keeping the cable taut are, left to right, George Masko, C. M. Philip and Earl Beckett.



BEFORE A tree, dangerous to power lines is felled by a Hydro forestry squad, many large branches have to be sawn off to ensure it being brought down cleanly and safely. Foresters use ropes both for their own protection and to facilitate their work. Here Joe Goulet, left, and Harry Moorhouse are shown secured by double bowlines and stirrup hitches, while they are prevented from slipping by taut line hitches in their ropes which are attached to crotches in sound branches overhead.

WHEN HYDRO foresters have to prune trees to protect power lines, the work is carried out along the most scientific lines. Secured by his double bowline and a taut line hitch, Charlie Philip is giving the wound caused by the lopping-off of a big limb a liberal treatment of asphalt paint. This will prevent any possibility of infection and induce rapid healing. Note how in sound practice the cut is made flush with the trunk of the tree.

HYDRO'S SKILLED FORESTERS

(Continued from page 4)

crew foreman told us. "They're as much at home up there as a farmer on the top of a haystack. Actually, they are much safer."

Hydro foresters never wear climbing spurs. They would puncture the bark of a tree and expose it to disease and infection. The recommended dress consists of strong high-top boots and tucked-in breeches, with a shirt or coat that will not catch or snag easily.

Climbing Demonstration

W. M. Grundy, assistant-superintendent of the forestry branch, who had come out to see how the job was progressing, volunteered to give Hydro News a few pointers. As he was knotting the end of a rope in preparation for his demonstration, Foreman Kinnear beckoned to a new recruit, who was loading branches on the Hydro truck. No chances are lost of imparting instruction.

The assistant-superintendent glanced up at a branch of the tree under which we were standing. He had just that knowing and, to duffers, that somewhat irritating look that you see in the eye of a professional golfer as he takes up his stance for an approach shot. A quick, rhythmic motion of his arm, and the rope swished through the air like a sky-rocket. It slipped neatly over the limb, settled in the crotch and then came running down to within easy hand's reach. There were now, in effect, two ropes instead of one, and before the astonished Hydro News' photographer could focus his camera, Mr. Grundy was climbing up them, hand-over-hand. "Watch him!" the foreman exhorted his new recruit. "He's putting on that foot-lock I've been showing you."

Mr. Grundy was now swinging easily in the rope. With a quick turn of the ankles, he had taken the strain off his arms and was literally "standing at ease."

"I could rest like this all day," he called down to us.

It looked easy. But the recruit, who had already practised the foot-lock many times, still seemed awkward.

"He's got the idea," said Mr. Grundy, as we walked away. "But this rope work needs practice, practice and more practice. The average man requires six months' to a year's training before he can carry on his work without close personal supervision and several years are required before he is fully trained."

Scientific Pruning

We watched another member of the crew take a big limb off a tree. In this operation an incision was first made on

the underside of the branch. When the final cut was made an inch or so further along from the top side, the limb came off without any peeling of the bark. This is known as a "jump cut," and was followed up by sawing off the stump flush with the trunk. Afterwards the wound was liberally smeared over with asphalt paint to seal it off from possible infection and induce rapid healing.

Diagnosis

On Highway No. 6 Hydro News found Russell Joyce, sub-foreman of the forestry division's power chain saw squad "diagnosing" a Lombardy poplar. He was using a brace and bit. It was explained that this was the only sure method of determining the extent of decay in a tree. Three or four borings are made and the wood taken out in the different borings is examined. The amount of sound wood for each boring is added and the sum is divided by the number of borings to determine the average amount of sound wood. In this way it is discovered whether the decay has reached a stage which necessitates the removal of the tree. The poplar in question was found to have very little sound wood at the base. It was what has previously been referred to as a "hot spot" or emergency case.

A Typical "Removal"

A few hundred yards further on stood a lofty elm.

Now the elm is a noble tree and has cultivated the laudable habit of rearing its branches well above Hydro power lines. In this case, however, the tree was suffering from a progressive type of rot which had crept in through neglected scars and wounds. If it were left standing, a strong wind might bring it down, and it might fall across the roadway, with tragic results not only to the Hydro line but to passing traffic. It would have to be removed, and the date set was that very day.

"Trees are like human beings," reflected Joyce, who, like many others, has found in the forestry service a fount of philosophy. "Some of them live out their full span of years. Others, attacked by disease, succumb prematurely. Often, as in the case of us humans, if their troubles are looked after in time, they can be saved for many years of hearty old age. Look at that elm. I'd say it was about seventy-five years old. That's only middle age for that type of tree. But it wasn't looked after when its troubles started. So now it has to come down."

It was explained that while the Commission's forestry branch is actively engaged in conservation work at Hydro properties, it does not undertake protective tree surgery along the public highways or on privately-owned lands. When,

however, in their clearance work, they come across a fine tree that shows signs of injury or incipient disease, they try to co-operate by passing word to those concerned.

The skilled foresters of Joyce's crew saws swinging at their belts, were already swarming up the ropes to the spreading branches of the elm, some of which would have to be removed, in accordance with Hydro's rigidly enforced safety practices, before the tree was felled. Securing themselves in almost less time than it takes to tell by taut line hitches, the men worked with astonishing speed and precision. As the branches were sawn through, they were deftly lowered in clove hitches so that there could be no possibility of danger to passing motorists.

Power Saw In Action

In the meantime, Joyce and his team mate, Jack Mercer, were removing a precious instrument from the Hydro truck. This was the power saw, which, when not in use is kept under lock and key, day and night.

The saw was brought over to the tree and prepared for action. As soon as the foresters had finished their job among the branches and had slid safely to earth, the sub-foreman and his skilled helper went to work. Carefully guided by a deft swing of the wrist, the heavy steel blade, whose temper would put the old sword-makers of Damascus to shame, made three cuts with amazing speed at the base of the elm on the side facing away from the road. The wood between the incisions was then hewn out by Joe Goulet, who is believed by his mates to have been born with an axe in his hands. Between the two upper incisions the wood was cut in such a way as to leave a safety ridge to prevent the tree from "jumping" when it was felled.

A cable was now attached to the tree about half way up the trunk and led back about 100 feet into the field adjoining the highway, where Joe Goulet, Harry Moorhouse and Bob Young formed a human "anchor" to control the direction of the tree in falling.

Again the power saw went into action—this time on the opposite side of the trunk to where the first cutting was made and on a level with the top cut in the "notch".

The steel blade ripped away with a sort of iridescent flashing. It would have been white hot if it had not been for the continuous flow of oil over the blade. Joyce was following the cut with a practised eye.

"That will do it, Jack."

The men withdrew the saw and stepped a little back.

(Continued on page 30)

NEWSMEN GET FIRST-HAND IMPRESSIONS OF COMMISSION'S ALL-OUT PROGRAMME

Itinerary Includes Kipling Transformer Station, Scarborough Frequency Changer Unit, Burlington, DeCew, Stewartville And Des Joachims — Also Visit Linemen's Training School — Part Of \$200,000,000 Post-War Construction Programme

With Hydro's all-out effort to overtake the tremendous backlog of work from the war years and meet unexpected and unprecedented demands for more power since the close of hostilities arousing widespread public interest, newspapermen and magazine and trade paper editors have been obtaining first-hand and comprehensive impressions of a number of important projects which are now under construction.

These projects form a part of the \$200,000,000 post-war construction programme. When completed, they will add approximately 700,000 horsepower to the installed power capacity in Ontario.

Interest in the undertakings now under way has been heightened by the fact that the Commission, despite the problem of existing shortages of many essential materials, is seeking to accomplish in four or five years work that would normally be regarded as taking seven years to complete.

As a preliminary to the tour of projects under construction, the newsmen had an opportunity of inspecting the Commission's Linemen's Training School in Etobicoke which is believed to be the first school of its kind in Canada. There, they saw groups of trainees, most of them former service men, attending class room lectures, climbing poles, erecting poles, stringing line, tying knots and learning all that an efficient lineman must know if he is to "win his spurs." Through this school, it was pointed out, trainees cover within three months a curriculum of theoretical and practical work that would take several years under the former system which made it necessary for the would-be lineman to get his training as a helper in a line gang. The newsmen saw the comfortable sleeping quarters, the spotless cafeteria and recreation facilities provided for the trainees who, while learning, receive full, regular pay.

Next, a visit was paid to Kipling Transformer Station where seven 110,000-volt oil breakers are being erected along with the necessary steel structures, connecting materials, control and relay building and oil-handling equipment to improve the service and security of power supply to the Toronto metropolitan area.

It was explained that this station would provide for a better segregation of lines in case of failure on any one section of line

feeding the Toronto area. Work on the 110,000-volt switching station was started last July and is scheduled to be completed by August this year.

The next part of the programme at Kipling calls for the construction of a step-down station.

In summing up the work being done at this project, one Commission engineer stated: "Kipling transformer station will be the terminal for the fifth 230,000-volt circuit from the east. There will be three 25,000 kv-a (230,000/110,000-volt) step-down transformers, together with a 110,000-volt regulating transformer and a 40,000 kv-a synchronous condenser, scheduled for service in 1948 when it will be connected to existing lines."

The fifth 230,000-volt circuit, it was stated, was not expected to be ready for service until the end of 1949.

Temporary buildings constructed at the Kipling site represent the initial step in a programme to provide a major maintenance, repair and storage centre. Permanent structures are to be completed as conditions permit.

At Scarborough, the newsmen were deeply impressed by the gigantic 490-ton frequency changer unit, which is housed in a high, oblong, brick building, and which was placed in service in the beginning of July of this year. Engineers explained how the unit would facilitate interconnection between the Niagara (25-cycle) and the Georgian Bay and Eastern Ontario Divisions (60-cycle) by means of a 110,000-volt line from Leaside Transformer Station to Scarborough, where the power is stepped down for the frequency changer and then stepped up again into the 110,000-volt transmission system to Barrie and to Oshawa for interchange of power between the three areas.

The installation at Scarborough comprises:

A 25,000 kv-a, 25/60-cycle frequency changer unit with associated transformers and control equipment;

Two 8,000 kv-a transformers stepping down from 110,000 volts to 26,400 volts to supply power to the Scarborough area at 26,400 volts instead of the present supply from Leaside Transformer Station at 13,200 volts.

A second 25,000 kv-a frequency changer is now being manufactured for this station

as well as necessary switching equipment, and, it is announced, plans have been made for the extension of the buildings. It is anticipated that the second frequency changer will be in service by June, 1948.

An indication of the all-out pace which has been maintained in carrying out this work can be gleaned from the fact that grading on the site was started last July, excavation for footings last September and the brickwork in March of this year.

At DeCew Falls, near St. Catharines, the touring writers saw the addition to the existing plant now nearing completion. This new unit, it was pointed out, will add 70,000 horsepower to the Niagara power pool.

A visit was also paid to the Burlington Transformer Station which is the main operating centre for that part of the system extending from Hamilton to Windsor. Located one mile west of the Burlington C.N.R. station, it is the terminal for two 220,000-volt transmission lines (one from the east and one from Leaside Transformer Station).

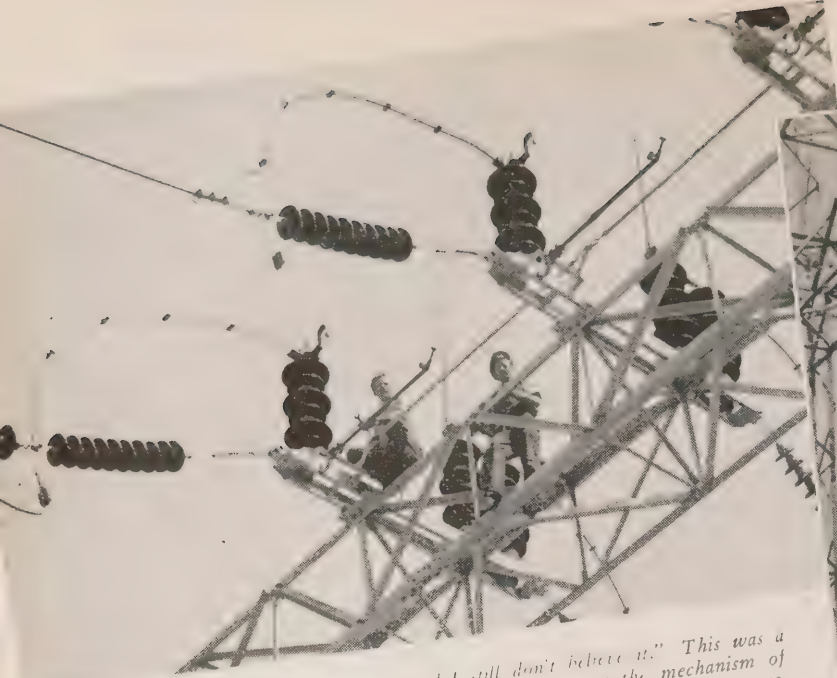
The members of the press party were told how the power is stepped down to 110,000 volts through nine 25,000 kv-a transformers and transmitted to eight circuits running to Queenston, Hamilton, Dundas, Guelph and Woodstock. At Burlington there are also two 40,000 kv-a condensers which serve to regulate voltage and reduce transmission line loss. Each of 25,000 kv-a transformers weighs 250 tons and each of the 40,000 kv-a condensers 235 tons.

Construction of the Burlington station, whose grounds occupy 72 acres, was started in November, 1940, and completed in progressive stages over a period of four years. The station represents an investment of approximately \$6,000,000.

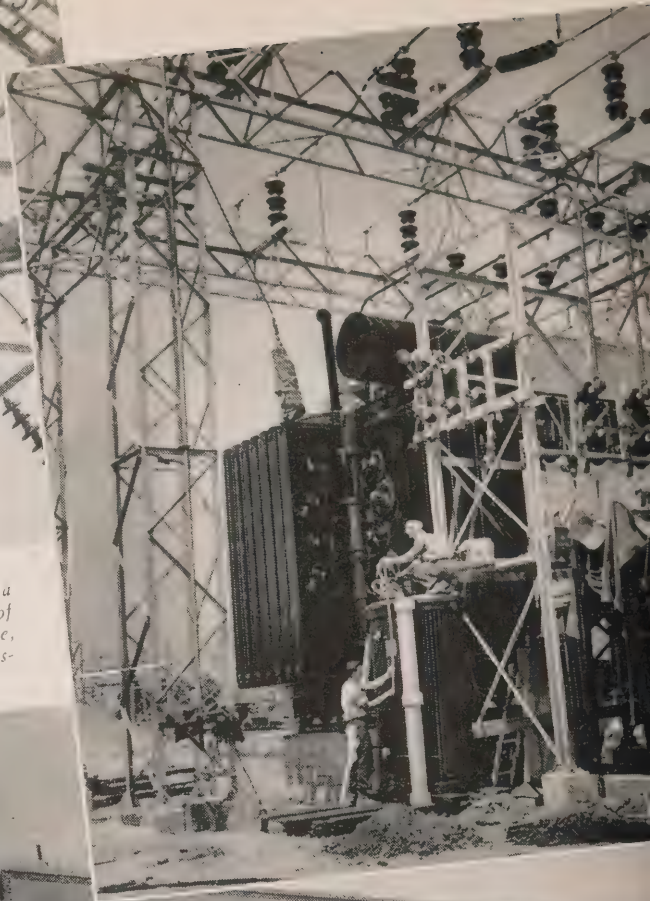
Stewartville and Des Joachims where two important developments are now under construction are also on the press itinerary. At the former, located on the Madawaska river, the dam and powerhouse for an 81,000-horsepower plant are now advancing and, if present schedules are maintained, this development should be in service by April of 1948.

Then at Des Joachims on the Ottawa river, 35 miles upstream from Pembroke, the Commission has completed preliminary

(Continued on page 10)



"SEEING IS believing . . . I've seen it and I still don't believe it." This was a comment from one of the newspaper men as he looked over the mechanism of the Scarborough frequency-changer station. Looking up at the overhead structure, (left) the final adjustments are made to the insulators while, on the right, transformers are anchored into place



E. M. WOOD, one of the Commission's engineers, paused to explain to Hydro's guests how the 60 cycle power goes in one end of the building and comes out at 25 cycle at the other end, or vice versa depending on which cycle is required. The building housing the changer is shown upper right, while down below, a group at the lunch table tonight, describes where the different events are located. Included in this picture are: Ted Soudie, son, Gillies Limited; Don Sheridan of the Globe and Mail; Helen News; James Ray; William Rottman, Editor, Hydro News; the Commission general superintendent in person; the Commission and Allen Kent of the Evening Telegram.





ONE OF the "toughest" assignments ever handed out to the Hydro News' photographer was to get pictures of the various editors from newspapers and trade magazines while they were making a tour of Hydro properties—they are all camera shy. At the Linemen's school (right), however, the photographer got this informal shot showing Max Coulson, Electrical News and Engineering; Victor Manser, Electrical Digest; John Gale of The Star, and E. M. Wood of the Commission staff.



THE HYDRO men who were conducting the trip had to be on their toes in so far as answering questions was concerned, for Newspaper men have a habit of ferreting out odd angles on subjects. At Kipling (lower left), maps and blueprints were produced to show where the lines of the station. Included in the exact function were: Charles Lovegrove, Montreal Herald and Weekly Star; Allen Kent, The Toronto Telegram; Donald O'Hara, Queen's Park;

NEWSMEN GET FIRST-HAND IMPRESSIONS

(Continued from page 7)

clearance operations for the construction of a 480,000-horsepower development which will rank second in magnitude only to the Queenston plant on the Niagara river. Subject to trends in the material situation, present schedules call for the placing in service of three units, at this development, with a total capacity of 180,000 horsepower, by September, 1950. If the work goes forward favourably, it is expected that another three units will be in operation by June, 1951.

Other Important Projects

Newsmen were also advised concerning plans for other important projects which are designed to augment the power supply in Ontario and improve service generally. For example, a 53,000-horsepower development is now under construction on the Aguasabon river in the Lake Superior district some seven miles east of Schreiber. Again, subject to favourable circumstances, this plant is expected to be completed by September of next year and will provide additional power for the pulp and paper industry and for consumers in contiguous communities.

On The Mississagi

Plans are also proceeding for the construction of a 56,500-horsepower development at a deep gorge on the Mississagi river, known as Tunnel Site, about 20 miles from the town of Thessalon. Time schedules have not yet been prepared for this project that will be brought into the system known as the Northern Ontario Properties which are operated by the Commission as trustee for the Provincial Government. A high tension transmission line will be built to tie in the Tunnel Site development with the power services from Abitibi Canyon, and a frequency-changer unit tied into the Abitibi, will be installed at Sudbury to look after the interchange of 25 cycle and 60 cycle power. Through these facilities, power derived from Tunnel Site can be used to augment supply as required either in the Sudbury, Nipissing or Timiskaming districts.

In the Patricia district of North-western Ontario re-installations and rehabilitations at the Commission's stations at Ear Falls and Rat Rapids will, it is stated, increase present capacity by approximately 9,000 horsepower—a useful "lift" to the gold-mining industry centred in that locality.

New Transmission Lines

As the work on these developments proceeds, the Commission is busy with the construction of new transmission lines and the rehabilitation of old ones in many sections of the province. Construction is being carried out on a "linking-up" basis

which will round out a grid system and facilitate the interchange of power loads throughout the divisions of Hydro's Southern Ontario system. Of great importance in this connection is the installation of two frequency-changer units in Scarborough Township near Toronto. One unit is now in service, while the other is scheduled for May, 1948. Rehabilitation of power lines is also going forward in many districts with the object of providing improved consumer services through higher voltages.

Rural Extension Programme

Although a temporary check has been given to Hydro's rural extension programme by the shortage of materials required for construction, it is pointed out as worthy of note that last year the Commission built 1,189 miles of rural lines and served 16,802 new rural customers, of whom 6,356 were farm consumers. Although line built represented only 60 percent of the rural extension planned for the year—some 73 percent of the consumers added in 1946 being accommodated on existing lines—taken altogether, it was a record for any one year in Hydro history.

Increasing Power Demands

Pending completion of these vital undertakings, Hydro is confronted with the problem of steadily increasing demands for power—a common problem to most countries in the post-war world. Contrary to every reasonable expectation, there was no recession in load following the war. Instead, war time industries converted, in some cases almost overnight, to peace time enterprise, while newly established industries were making applications for power. This problem was accentuated from a power supply point of view by heavy demands from rural areas and from domestic and commercial consumers.

Formulating Plan

In co-operation with the various Hydro municipalities throughout the specially affected southern areas of Ontario, the Commission has been closely examining this problem with a view to formulating a plan for the more economical use of power particularly during the peak-load periods next winter. It is understood to have been generally agreed that reasonable economies will have to be exercised by consumers at these times, pending the building up of power reserves through the completion of the developments now proceeding. Plans now under discussion, it is stated, are designed to ensure against wastage of power during critical periods on a co-operative basis which will occasion the minimum of inconvenience to all classes of consumers, and ensure sufficient power for maximum employment and for the establishment of new homes and

"YOUR HYDRO NIGHT" PLANNED FOR NOV. 5

Wednesday, November 5, has been definitely set as the date for the banquet which will inaugurate new activities sponsored by the Ontario Hydro-Electric Club and designed, on a basis of good fellowship and co-operation, to prove helpful to every employee of the Commission.

One Big Family

Hydro, it is pointed out, has always been regarded as one big family. In recent years, particularly during the war years, however, the tremendous expansion of this great enterprise and its staff has made it difficult to maintain the wide acquaintance and the spirit of fellowship and teamwork so essential to the fullest satisfaction in work and maximum production. At the same time, the need for good-will contacts with the public has multiplied.

Under these circumstances, it was felt that Hydro staffs should be afforded improved opportunities of learning more about the different departments of Hydro, of how their tasks dove-tailed into one another, and of how essential the work of each individual was to the welfare and progress of the organization. The general manager is said to have heartily approved of the plans for "Your Hydro Night" for the purpose of imparting information and instruction, which will assist the individual in his particular work and enlarge the opportunities for his advancement.

Accommodation For 600

At the first "Your Hydro" evening in Columbus Hall, Toronto, on November 5, there will be accommodation at the tables for 600, and an excellent dinner will be served for \$1.00. Speakers will be R. L. Hearn, general manager and chief engineer of the Commission, who has chosen as his subject "Hydro's Unparalleled Expansion—A challenge to Every Employee"; M. J. McHenry, who will speak on "The Part the Individual Plays in Consumer Relations;" and John Dibblee, who will address the gathering on "Opportunities with Hydro."

A committee has been appointed to make all the necessary arrangements. It consists of G. H. Taylor, chairman, I. MacLean, H. R. Morris, Miss G. Bartlett, H. Lyle, R. K. Pile, W. J. Graves, A. Thompson, D. Preston, E. Brunnelle, Miss E. Muir and H. Hillier.

industries.

Meanwhile, as stated, in addition to carrying out a large-scale programme of new power development, the Commission is proceeding with a rehabilitation programme designed to place existing services on a basis of the highest efficiency.

ACTON

By W. Ronald Mathieson,

Hydro News

If you happen to spend a Saturday afternoon in Acton, up in Esquesing Township, don't be fooled into thinking that it is just another Ontario small town. On the surface it might look like it with all the farmers coming into town, getting a haircut while their wives are doing the shopping and the youngsters making a bee-line for the drugstores to buy "double-dippers." You will also find the teen-age crowd walking up and down Mill Street in little droves while other cheery family groups clog the sidewalk.

But there is something that sets the place apart, that marks it as a progressive, live-wire centre where there is little unemployment and life moves on at a refined and wholesome gait.

What makes it different? Let's look at the economic side of the picture. To begin with, every house in the area with the exception of one is serviced by Hydro. The twenty odd industrial con-

cerns also rely on electricity for their daily operation. Thus the Acton Public Utilities Commission has become the pulse of the district and has well merited the responsibility that the local folk have placed in its hands.

Hydro's History

Hydro first came to Acton in 1913 and was administered by the local council who took over the old steam generating plant. In 1921 the present system of a Commission was established and the commissioners are elected for a two-year period.

Charles W. Wilson, superintendent of the Utilities, concerning whom we will have more to say later, supplied Hydro News with some very interesting statistics regarding the power operation with respect to the consumer. When the old steam plant was functioning, the customer was paying about 10 cents a kilowatt-hour. Then when Hydro came along, Mr. Wilson points out that the 147 consumers were billed at 5.6 cents a kilowatt-hour and the total load including the few industries was some-

thing around 59 horsepower.

As the years went by more customers "signed up" and the power rates began to decrease so that the present day picture looks something like this: there are 596 domestic consumers who pay 1.2 cents per kilowatt, 87 commercial users are paying slightly more at 1.3 cents, and the 22 industrial firms pay \$.24 per horsepower a year.

The 1913 load of 183 horsepower has pyramided up to 2,300. By this you can see that the whole place is Hydro conscious and proud of the record of the Public Utilities Commission.

Pioneer Days

From the registry office and the files of the Acton Free Press . . . newspapers are always a good source of information. . . . Hydro News learned that it was on January 28, 1829, when a patent was issued by the Crown to Silas Emes, a homesteader, giving him a hundred acres in the second concession. The next item of interest, in chronological order, crops up the following year when the Canada Company was granted 200 acres in the third concession.

Then the homesteaders came and the

(Continued on page 30)



QUIET AND restful is the general aspect of the side streets in Acton, where life moves at an even tempo and most of the village goes to the movies on Saturday night. People in Acton take great pride in their gardens and some fine flowers are grown there.



KERWIN McPHAIL, who is learning the Utility business from his superintendent, Charles Wilson, poses before the Hydro truck at the municipal substation.



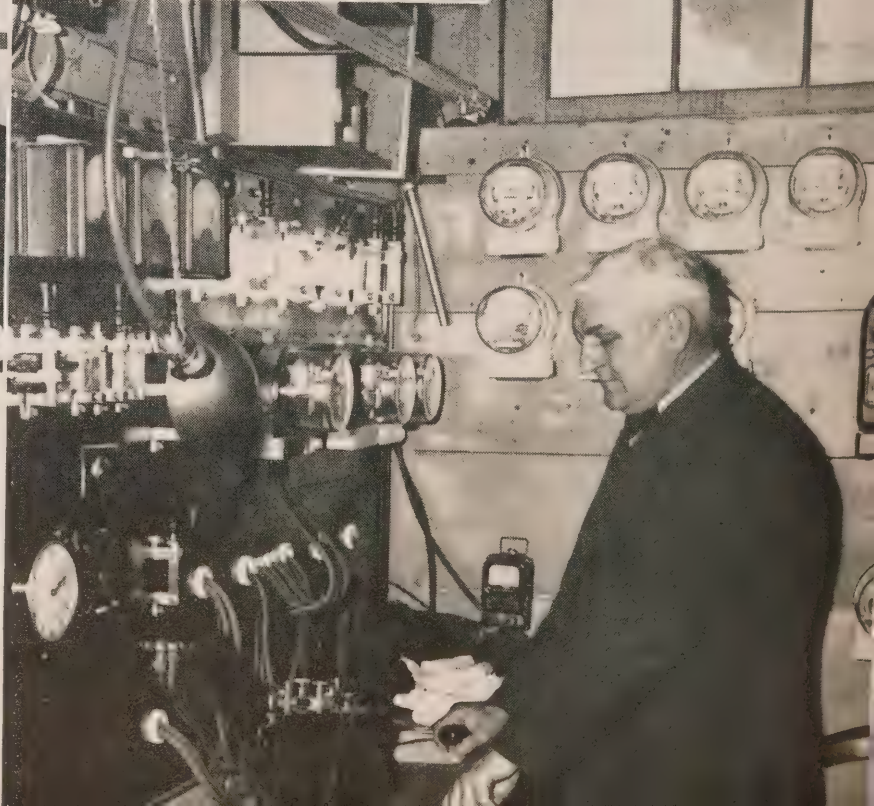
HERE IS the Y.M.C.A. building with the Acton Public Utilities' office on the right hand side. Acton is said to be the smallest municipality in Canada to have a "Y" building.



IN THE Acton Public Utilities' office (above) which is located in the Y.M.C.A. building, Charles Wilson the superintendent, chats with Jessie Walker and Jack McGeachie.



SITUATED UP on top of the substation, the electronic eye which measures the amount of light, automatically turns the street lights on at night and off in the morning.



HERE IS Charles Wilson, superintendent, (right) in action. Standing before the meter board which he made, Mr. Wilson checks the readings to make certain that they are recording accurately.



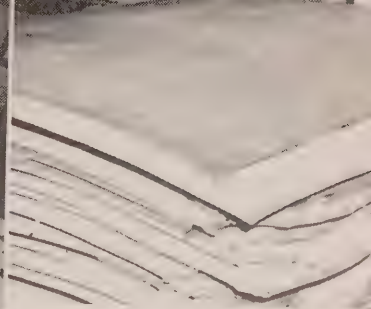
FAIRY LAKE at Acton (above) was originally created for a millpond by flooding eighty acres of land. As the present mill is powered with electricity, the lake is now used for swimming and boating in the summer, and skating during the winter months.

AT THE Baxter Laboratories, (right) Hydro News watched the process of bottling intravenous solution. The operators wear rubber gloves and the room is sealed off, but as there is an efficient air conditioning system, working conditions are quite comfortable.



COMMUNITIES ARE quite often founded around a grist mill, and Acton was no exception. Here is the site of the original dam at the west end of the village.

MANY OPERATIONS (below) at the Beardmore Tanneries are carried out by electricity. Here is a type of buffer which smooths out the leather. It takes approximately two months for a hide to go through the various processes.



ARLOF DILLS, (below) the editor of the Acton Free Press, is shown here beside one of his machines which folds the paper into tabloid size. Mr. Dills took over in 1928 after the former editor, H. P. Moore died.





**By Leon Van Cleemput, L.S.C.-A.H.
Chief Horticulturist, University of Toronto**

There is an allurements about mid-year that tempts one to ease up on the care of the garden, probably through the reflex effect of the heat, but there is no doubt that now more than at any other season the gardener needs inspiration and urging to further effort. This year extra work is absolutely needed. The extremely unfavorable weather has forced many of us to postpone regular planting insofar that even in my own garden I am still planting flowers and vegetables which have adorned my house or provided food at this season in other years.

But do not be discouraged. It is not too late to sow and to plant. Many annual flowers can still be started from seed to give a nice display in the Fall. Poppies, Mignonette, Larkspur, Nasturtium, Gypsophila, Cornflowers, Phlox Drummondii, Annual Coreopsis or Calliopsis are some of them and are excellent material to fill in the border where the early flowering will have passed its best.

WHERE THE FLOWERS ARE GROWING. Many growing perennials are bedecked with holiday attire. Festive flowers and restful greenery abound, and though several early perennials are over, the retarded season is giving us a wonderful display of Roses, Shasta Daisies, Coreopsis, Delphiniums and other beauties. When cultivating the perennial border, do not stir the soil deeply as many plants are quite shallow rooted.

In the biennial group the Campanula Medium or Canterbury bells, the Digitalis or Foxglove and others of this nature should not be kept growing, but should be thrown away after blooming. Though they may occasionally flower another year, their showing is really poor. Grow some seedlings every year for next season's flowering. And this is the right time to start them from seed.

Cut the flowerheads when bloom fades unless you want to save some seed. This

cutting is especially needed for continuously flowering plants like Corcopsis lanceolata, Gypsophila Paniculata and perennial sweet peas in order to have them flower right along. Staking the tall-growing perennials should be a matter of course and not an after-aid to plants which have fallen over. As soon as the plant reaches the point where it is apt to need support, this support should be given. Use inconspicuous painted or green-coloured stakes and string.

July is also the end of the tall bearded Irises, and after flowering it is best to divide them and to make any desired changes. On the other hand this month gives us the Japanese Irises, and they should be heavily watered several weeks before they bloom, as well as during their flowering season.

July maintenance may be said to be all routine—Weed, Water, Cultivate. It is one of the big watering months, and when I say watering I do not mean a mere sprinkling. Consider watering mainly as an emergency measure to take the place of a much needed rain, and water accordingly, that is thoroughly.

Cultivating is one of the greatest aids to plant growth. In July, one of the most essential benefits of cultivation is the conservation of soil moisture. It should be resorted to after every watering and rain.

One thing is certain, and that is there will be weeds and more weeds if you do not "keep at them". The best way to get rid of weeds is to destroy all you can when they are small and never let them seed. With the new chemicals now on the market there is no reason why weeds should not be controlled in every garden.

Trim evergreens now to keep them shapely. New growth will thus be encouraged. Water newly planted evergreens at intervals of once a week. Before the end of July, soon after flowering, Rambler Roses should have the old wood

cut away. Tie the new canes and give them plenty of room, selecting only the most desirable of the new growths, cutting out weak and crowded shoots. Ramblers trained against buildings are generally infested with both fungus and insect. Spray in time to control and keep up ramblers' vitality by regular watering. The bush-roses also will be through their first blooming period, and to encourage vigorous new wood for Fall flowering they should have their growth shortened. A dressing of manure or liquid cow manure will help both the bushroses and the ramblers.

VEGETABLE GARDEN. Some gardeners who are boasting of already having gathered and eaten radishes, lettuce, spinach, beet greens and even a few peas, need not discourage others who as yet have only their land ready for use due to unfavorable weather. The time is still right for planting the two finest crops for a small vegetable garden—tomatoes and beans. Both are excellent for eating fresh or canning for Winter use. Besides that if some tomatoes are still green in late Fall they come in very handy for pickling.

Lettuce of a variety adapted to summer heat like Great Lakes or a good leaf lettuce sown promptly, will keep the salad bowl filled. Greens for cooking such as Tampala, Chard and New Zealand spinach will vary the menu during Summer. Carrots, beets and kohlrabi planted now will be ready by the end of August. It is not too late for a vegetable garden and in this year of costly living, every bit helps. The gardening friends who are on high land and are better off than others should stake and tie their tomatoes, and side shoots should be pinched out frequently. Too much thinning out of the foliage is not advisable if you want good, juicy fruit. Melon and squash vines must be kept off the ground by laying brush for them to climb over. Small boards, pots or excelsior placed under melons will cause them to ripen more evenly than they do when left on the ground and will prevent the flat, bleached

MILLION LOGS JAM LOWER STURGEON G. S.



outside often seen. If July weather is wet, spray potatoes twice this month or oftener. After digging early potatoes, use the space for planting late turnips. Late cabbage, cauliflower, kale, brussels sprouts and celery should be set into permanent quarters this month, the earlier the better. Don't however be misled into supposing that late varieties are indispensable because they are for late use. Early varieties are an advantage in many localities as they mature before frost.

Now that the asparagus crop is over, cultivate thoroughly and keep clear of all weeds. Topdress well with a good commercial fertilizer or well-rotted manure, preferably both if available. Next year's yield is proportionate to the feeding taken in now.

Spray regularly with Bordeaux your muskmelons, cucumbers, pumpkins and squash, and do not forget to apply a fertilizer rich in nitrogen to your onions and leeks. Radishes can be sown for succession, while the black Spanish can be sown for Winter use up to the middle of the month (July).

AUGUST, the month of the beautiful Gladioli and the annual Asters. More Phloxes, Delphiniums, Roses and annuals, besides Anemones, Astilbes, Campanulas and Salvias, still masses of bloom in the well arranged gardens. At this time Tuberous Begonias are a glorious sight if grown in a shady spot. August is the month of the annual shows. By tending to the few important needs the garden will continue to flourish. The crying need these dry days is for water and a copious supply of it. Don't let the flower garden get that "run down" appearance. Remove the dead stalks and stake more tall-flowering ones. Perennial vines should be pruned now. Remove old and unproductive wood to give ample room for the young, vigorous shoots. This is also an excellent time to prune shade trees. Cut branches very closely in order to avoid leaving shoulders and make clean cuts. Paint the wounds carefully. To develop highgrade Dahlia blooms, the plants must be properly disbudded and the young, sappy growth should be taken out.

August is vacation time for Peonies. Being practically dormant, the roots take kindly to moving. Peonies carefully moved this month or the beginning of September, will bloom next year if given the proper treatment. Make a trench, two feet deep. Put rotted manure at the bottom and fill in with good loam mixed with bonemeal. Let the ground settle before planting. Plant shallow, one to two inches under the ground, and put still more bonemeal as a topdressing mixture after planting.

Though I mentioned in the July section to cut at the base all the canes that flowered on Ramblers like Dorothy Perkins, leaving only the new ones growing at

This will give you some idea of what a log jam of a million 16-foot logs of pulpwood looks like.

It seems that around the middle of May some 45,000 cords of pulpwood were stored in booms in the Mattagami river between Sandy Falls and lower Sturgeon Falls awaiting the drive to Smooth Rock Falls. Suddenly one afternoon, flood waters broke the booms and released the logs which started downstream en masse. On reaching lower Sturgeon dam the logs entered the "V" shaped guide booms which were placed for sluicing the logs through the dam. The logs then fanned out and jammed in the 16 sluices of the dam.

It can readily be understood that "breaking" such a jam would be exciting, but dangerous work. Patrolman L. P. "Phil" Theriault of Timmins, who in

addition to being a lineman and woodsman, is an experienced riverman, together with a river driving crew, started at the end sluice, found the "key log" and eventually worked it loose. In order to do this he had to stand on the logs with water rushing beneath and through the sluice. When the key log was released the whole mass started moving until another jam formed. Only his keen eyes, "corked boots" and the nimbleness of foot enabled the "jam breaker" to reach a place of safety when the movement started.

Bill Isherwood and the staff at lower Sturgeon were commended for their prowess in preventing a jam at the plant intake, and the river crew at the Abitibi Pulp and Paper Company are credited with doing exceptionally good work in the sluicing-through operations.

the base, the large-flowered class, like Dr. Van Fleet and New Dawn, should be treated differently. Their wood is more lasting and the new growth breaks along the older canes. So remove in August only the old canes to restrain the plant within its allotted space and cut off the new basal growth.

At the end of August, lilies that have flowered in June and July can be divided as soon as the tops die down. Take special care of the small bulblets which can be planted separately in a nursery bed. Work bonemeal into the ground before you re-plant the bulbs and rest each bulb on a two inch layer of buildersand for drainage. As the Madonna lily or *Lilium Candidum* is one of the lilies that should be transplanted in August, I wish to remind you that this lily wants shallow planting. The bulbs must be covered with not more than two inches of fine soil. Deep planting will never give satisfaction. Do not use manure on lilies.

Feeding the hardy garden Chrysanthemums with weak liquid manure at this time will add to their strength and result in more and larger flowers. Remove the seed heads from hardy Phlox plants to preserve the vigour of the plants and to prevent seeding of useless magenta-coloured Phloxes. With so many of the new hybrid *Hemerocallis* now available at reasonable prices, plant some more the latter part of August, a time more acceptable than any other in the year.

IN THE VEGETABLE GARDEN. As soon as a crop is harvested there is no excuse for leaving space unoccupied, even if you have to dispose of a little bit that is left in the plot. Why eat old carrots when there are plenty of young ones ready. You can still plant in August Cos lettuce, Chantenay carrots, early wonder beet, tendergreen beans and Chinese cabbage. Set also over some cabbage, cauliflower and broccoli plants from the seed started in early July.



HYDRO



THESE PICTURES may
Hydro's Quarter Century
graph, shown below, are
Russell, G. F. Drewery, E.
Stan Eisenhower, F. A. G.
H. D. Rothwell and J.

CAN YOU pick out your friends? The photograph above was taken quite a few years ago at a picnic when most members of the purchasing department turned out. Can you spot Roy Bergh, B. O. Salter and the ladies? Some of them are still with the Commission. Although we have no authority for our statement, the little lad in the "peanut scoop" hat is reputed to have made quite a name for himself as a flier in the recent war.



ALBUM



ostalgia to some of
ded in the old photo-
V. W. Trott, W. Earl
Duffy, F. H. Chandler,
on Beck, Len Dandeno,
as many others whom



PLAY BALL! And how they did. This was a game between the H.E.P.C. and the Toronto Hydro back in 1911 when a picnic at Centre Island was an eagerly anticipated event. Included in this picture are: Horace Beck, Charlie McEvoy, C. S. Grasett, J. Hyland, T. U. Fairlie, P. B. Yates, H. G. Acres, F. Rankin, R. M. Thompson, Rob Roberts, P. W. Southam, J. G. Jackson, S. McCordmick, F. Connery, E. Parks, G. Nurse, W. P. Dobson, Donald Lawson, F. A. Gaby, W. W. Pope, C. C. Bodley, P. W. S. Junior, Clary Settell and Herb. Powell.

CITY LIGHTS

**By Mildred C. Redmond,
Hydro News**

At exactly ten minutes after official sunset each day, an order goes out on a telautograph from the main office of the Toronto Hydro to five key substations. The operator in each of these stations who receives it immediately closes the street lighting switches that control his particular area and in a matter of three or four minutes the whole city of Toronto is lighted up for the night.

Then at exactly thirty minutes before sunrise the reverse order is issued and the lights are switched off.

At present the schedule of sunset and sunrise hours govern the operation of the city. At Toronto Island another system is used with success. There, a photo-electric cell is located in a position where it will face the north light. When the north sky registers a low of seven foot-candles the street lights are automatically switched on. This means that the lights may come on during a very dark day or, on a particularly dark evening, they will be switched on before

the official sunset time. This system has been approved by engineers and foot candle indication from photo-electric cells will be substituted for the sun light schedule.

Very Marked Improvement

Much interest is being shown these days in the progress of Toronto's new street lights. Already they have been installed on a number of leading thoroughfares including St. Clair Avenue, Carlton and College streets, Queen street and part of Avenue Road, while other installations are being made on Bloor Street. Driving into these newly lighted streets at night, the observer is favourably impressed by the marked improvement. The new units are mounted high and high intensity of light is emitted to the part of the street where it is most needed. The plan is to complete all heavy traffic streets first and then take care of the residential areas.

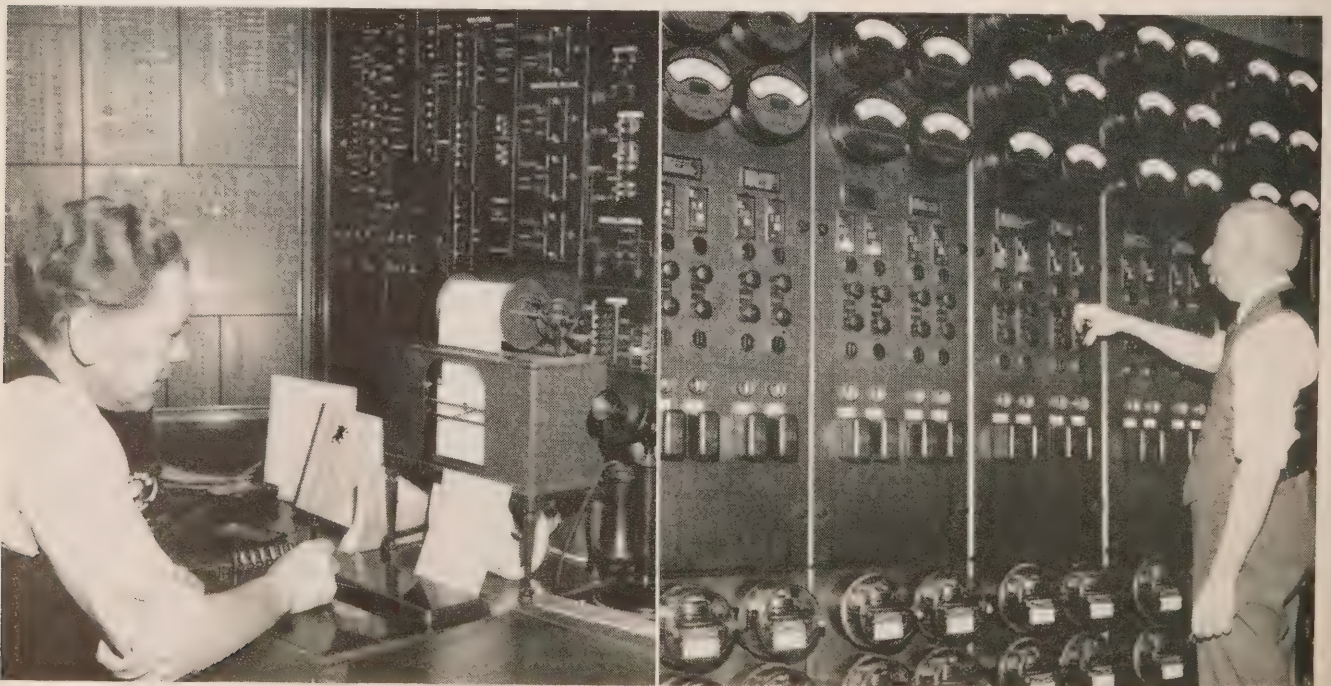
When the whole plan is completed, Toronto, it is predicted, will be one of the best lighted cities on the continent. That the new lights are worth the extra

expenditure involved has already been proved, not only by the added ease of getting around at night but also in straight statistical records from the police department. On a certain section of St. Clair Avenue, in a parallel period before the new lights were installed and after, the police records show that the ratio of night accidents has definitely decreased.

Studied Detroit's Lighting

The new lighting plan took shape two years ago when Hydro and city officials visited Detroit for the purpose of looking over that city's street lighting which was reputed to rank among the most efficient in America. In addition, Detroit has a fine experimental laboratory for testing lighting and its engineers are always willing to share the results of their investigations. As a result of this visit, it was decided that Toronto should adopt some of Detroit's ideas. As a start some 300 units were installed in thirteen different areas in Toronto. After working with these

(Continued on page 32)



EACH DAY at ten minutes past sunset, an order goes out on the telautograph from the main office of the Toronto Hydro-Electric System (left) to substations where the operator who receives it immediately closes the switches that control the street lights (right), and in a matter of minutes the city is lighted for the night.



STUDY IN contrasts on Danforth Avenue in Toronto. It can be readily seen here how the new lights (lower) emit a controlled, correctly-directed light while the old (upper) throw a scattered light that makes for glare.



LOWER: TORONTO'S new lights for heavy traffic streets; the luminaires are placed every hundred yards on opposite sides of the street. Right: luminaire design for all residential streets; it hangs over the centre of the thoroughfare and is 25 feet above the road.



ONE OF the tower trucks especially built to service the new street lights. Because of the height of the lights the ladder has to be particularly long.



GENERATOR HEAVIER THAN LOCOMOTIVE: TWO CRANES REQUIRED TO LIFT ROTOR!

Major Overhaul Of 500-Ton Queenston Unit Witnessed By Hydro News

Overhauling one of the big generators at Hydro's Queenston plant is like taking apart a giant locomotive. As a weight-lifting operation it is an even bigger job. The total weight of a Queenston generator averages 500 tons, which is said to be considerably in excess of the combined tonnage of the largest single-type engine and tender in the service of either Canadian or American railways.

One at a time, and once every five

years, the massive generators at Hydro's premier power station are stripped down to their foundations to ascertain the wear on vital parts and to determine whether or not the equipment is operating at maximum efficiency. Once every three years there is a minor check-up when all the moving parts are tested, as well as the brushes and leads.

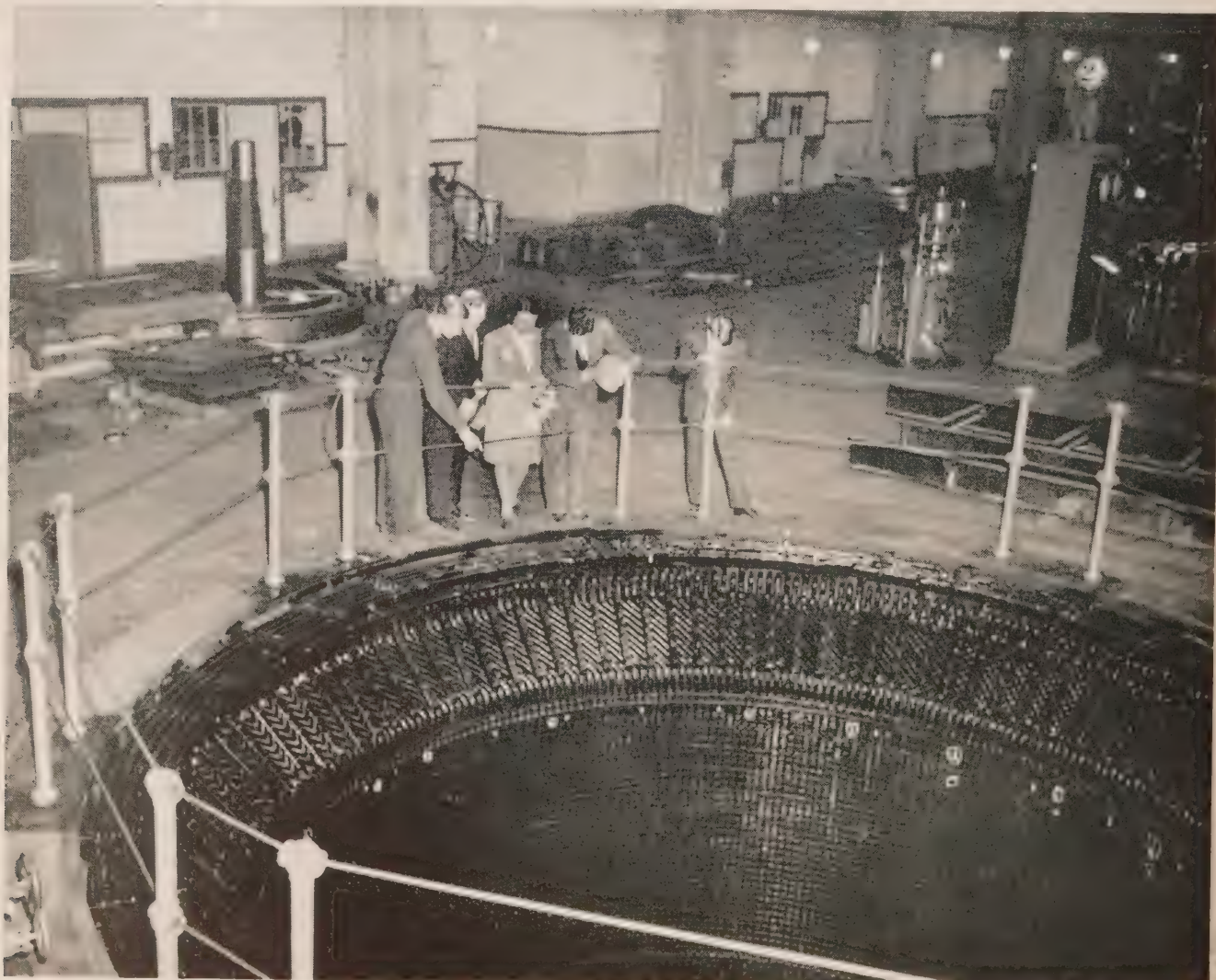
Supports A Million Pounds

On a recent visit to the Niagara district, Hydro News chanced to drop in at the Queenston station when a major

overhaul of No. 1. generator was being carried out. It was learned that the rotating part of the generator is suspended from a thrust bearing just below the exciter. This bearing is capable of supporting a weight of 1,000,000 pounds when revolving at the normal speed of 187½ turns per minute.

Working under the supervision of James Weir, the station's master mechanic, Hydro crews operated their powerful cranes with a practised dexterity that

(Continued on page 22)



LOOKING INSIDE the stator of a generator whose rotor has just been removed for overhaul, these visitors to Hydro's Queenston plant learn something of the size of the equipment installed there.



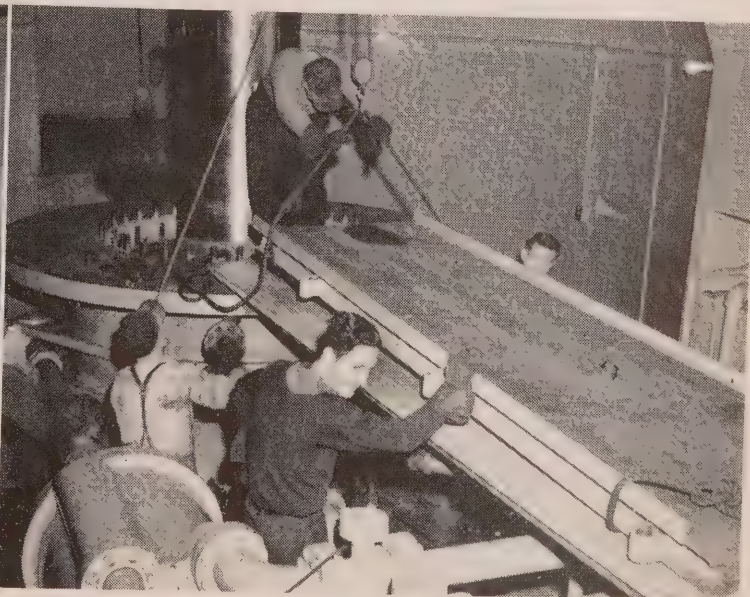
KNOWN ONLY to Hydro News as "Chips," the operator moves his loaded crane with the precision of a dentist adjusting his drill. The lower bracket of a generator is being carried along after removal from position, with crewmen riding on the arms to make sure it does not scrape the sidewalls. There is a clearance of only three-quarters of an inch.



THIS IS the turbine shaft before being lifted out for overhaul. It is connected to the water-wheel below and is coupled above to the generator shaft.



IN THE Commission's machine shop new parts are turned out to replace any worn or defective components in the unit under overhaul. In the foreground is one of the lignum vitae bearings set aside for re-boring.



REMOVING THE steel walk which the men have been using while working around the turbine shaft. The grapples of the overhead crane are being adjusted while the men guide the heavy plates into a snugly-fitting position.

GENERATOR HEAVIER THAN LOCOMOTIVE

(Continued from page 20)

made every "lift" look easy.

First of all, the exciter was removed. The exciter is a little generator—it weighs, however, $9\frac{1}{2}$ tons—and its function is to furnish direct current for the magnetic poles in the rotating field. The exciter is connected to the main shaft. It can be controlled either manually or by an automatic device so as to maintain a steady voltage in the alternating current which the generator proper is built to produce.

Following the removal of the exciter, the thrust bearing, weighing $7\frac{1}{2}$ tons, and the upper guide bearing and the upper guide bracket, weighing together 50 tons, were cleared. Then the lower guide bearing was taken out.

Brawny men, with the sinewy arms of blacksmiths, now went to work on the mammoth bolts securing the coupling of the generator and turbine shafts. There are twelve of these bolts and each one weighs 200 pounds. The men used spanners with a four-foot leverage—a real test for trained muscles.

A Mere 640,000 Pounds!

Everything was now in readiness for the removal of the complete rotor. It weighs 320 tons—a trifling 640,000 pounds!

Another overhead crane now hove into view, coming to assist its fellow. Working as a team, the two big cranes lifted out the rotor and swung it to one side. Considering the enormous weight involved, it was astonishing to see how deftly and carefully the job was performed.

The lower guide bracket was now removed so that the water wheel below could be dismantled.

The guide bearing for the turbine shaft is made of lignum vitae—a wood specially imported from Brazil. It weighs only $3\frac{1}{2}$ tons and was a mere feather for the big crane. Its removal was followed by that of the 40-ton crown plate, which was stored in a corner on the generator floor. The 25-ton turbine shaft was then taken out, and the removal of the runner and its component parts, which, altogether, weighed 16 tons, completed the job.

It was emphasized that these periodic overhaul jobs are necessary in order to maintain the efficiency of Hydro services. It was also pointed out that overhauls are always carried out at times of the year when the load is lightest so as to assure that the generating machinery will be in first-class condition for meeting, as far as possible, the heavy consumer power demand during the winter months.

LADY RECOGNIZES HOME IN HYDRO NEWS' COVER

Interesting Historical Facts Brought To Light By Discovery

There was one lady who was startled in a pleasant kind of way when she saw the front cover, "Old Mill Stream," of the June issue of Hydro News.

In that photograph she saw her old home.

The lady's name is Evelyn Sherlock of Ottawa, a member of the staff of "The Canadian Unionist."

This information, and other interesting facts were passed along by Nellie Davey, assistant editor of that paper.

The farm, according to Miss Davey's letter, is located near the village of Packenham in the Ottawa Valley and was bought by Miss Sherlock's parents 38 years ago at the time of their marriage.

Of Historic Interest

The house has considerable historic interest because its builder and first owner was one of the best known pioneer



leaders of the whole district, Sheriff Andrew Dickson. The Ottawa Journal ran a series of articles "Ottawa Valley Days" in which Dickson and this house are discussed in some detail.

Andrew Dickson Came To District

Andrew Dickson came into the district in 1831, about five years after the land had first been surveyed. He was one of those sturdy Scots whose kind has helped lay the foundations of this country. At the age of 22 he had been a lighthouse keeper off the coast of Nova Scotia. He stayed in this lonely spot for two years and as remuneration had been given 200 pounds in gold. With this money he brought his parents out to Canada and settled them,

and then for himself bought out the interests of the first two men who had built a few cabins and a mill in what is now Packenham village and renamed it Dickson's Mills. The gold pieces that were left, the story goes, were buried at the foot of a tree by himself and his wife, as their private bank.

Hung Blankets

It is also recorded that when he built his first house he couldn't get window glass or doors for some time and hung up blankets over the openings. During this time a daughter was born and "the Indians used to lift the blankets and come in to see the baby, the first white child born in the settlement." Dickson soon made a name for himself as a man of the highest integrity and he was one "paleface" whom the Indians trusted. He earned the lifelong friendship of the famous Anitome because he nursed the Indian back to health after he had been wounded. He was also a trusted friend of Peter White Duck, the Algonquin chief.

Dickson soon became the moving spirit behind the progress of the new community. By 1836 it had periodical courier service and he was the first township postmaster. At a meeting of the freeholders he was elected one of the three commissioners who under the magistrates of the Quarter Sessions would have general direction of township affairs. These posts were only the beginning of a really remarkable career. He became warden and later the sheriff of the District of Bathurst. He saw the possibilities of the railway when it was first being talked of and put his influence behind the new project. He even advocated a trans-Canada railway 35 years before it was ever considered officially.

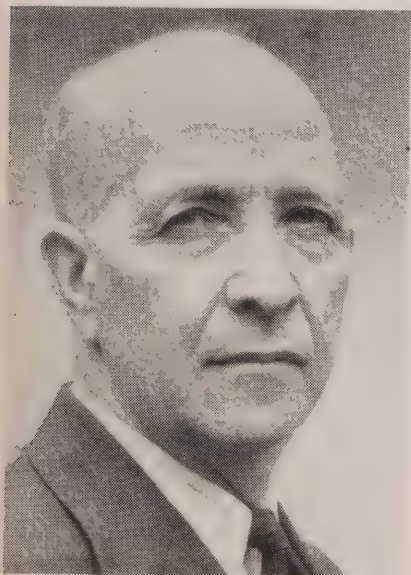
Highlight Of His Life

One highlight of his life was that at the Paris Exhibition at the time of the Second Empire he exhibited a collection of native woods and minerals, thereby creating great interest for Canada. When he died the whole valley of the Ottawa paid homage to one of its finest pioneers and a very remarkable man.

Hydro News wishes to express appreciation to Miss Davey for her courtesy in making these facts available and also for this nice tribute with which she closes her letter: "Personally, I think it is an unusually attractive picture and setting, and I can quite understand Miss Sherlock's feelings as she looked at it and recognized her childhood home."



CARL MARTIN HANSEN



Born in Norway over 60 years ago, **CARL MARTIN HANSEN** is serving his third year as chairman and his eleventh year as a member of the Acton Public Utilities Commission.

As a master mechanic Mr. Hansen received his education in Norway and since his migration to Canada has been a leading figure in Acton's public life.

Mr. Hansen is married and has two sons and two daughters.

SUPT. C. W. WILSON

Horatio Alger could well have written a book around the life story of **CHARLES WESLEY WILSON** who is superintendent of the Acton Public Utilities Commission. He was born in 1893 at Eden Mills in Wellington County and was married before his education had been completed. As a young man he went to work for the company which operated the electric tramways in Guelph and became a conductor.

One day a motor blew on the street car and much to the amazement of the passengers, the young conductor hoisted the floor panels and hooked the motors in series and started on his way again.

An electric manufacturer who was a

passenger on the car was impressed and invited Mr. Wilson to join his company. After trying to tell his new employer that he did not know the first thing about electricity, he accepted the offer.

A correspondence course in electrical engineering gave him the necessary background and soon he made another move. This time it was to take charge of Acton's electric service. While the general opinion was that Mr. Wilson was too young, he was, nevertheless, given the opportunity.

Charles Wilson, has made good and it was only a year ago that he received an award for having taken part in saving a life while working with a line crew.

ACTON COMMISSIONER



FREDERICK J. McCUTCHEON, a member of the Acton Public Utilities Commission, was born in 1890 in Erin Township and has raised a fine family of three sons. His interest in public affairs started back in 1935 when he sat in council and since that time he has been reeve for four terms. A cartage agent by trade, Mr. McCutcheon is well versed in town business and since he has retired from active participation in sports his one big aim is civic recreation.

JOHN ROBERT McARTHUR



Prominent in fraternal and Y.M.C.A. work, **JOHN ROBERT McARTHUR**, who is a Hydro commissioner and past chairman of the Acton Public Utilities Commission, was born at Limehouse near Georgetown. For 20 years, Mr. McArthur has been a reporter and general aide de camp for the Free Press and whenever he gets a few hours to spare in the summer, he heads for the fishing grounds with his wife and son.

LEAVES COBOURG

A. K. McINTOSH has resigned as manager of the Cobourg Public Utilities Commission, to take over the position of divisional engineer with The Hydro-Electric Power Commission of Ontario. He is at present working at Des Joachims where a new 360,000-horsepower development is under construction.

Mr. McIntosh went to Cobourg as P.U.C. manager eight years ago and during that time won the respect of many civic officials who agreed that under his supervision the P.U.C. in that district had improved its position substantially.

DES JOACHIMS

HERE ARE the "Rapides Des Joachims", which sweep round each side of the island. The log jam shown is a remnant of former years although big booms still come down the river. Just about where the man is shown in this picture is a dock which might have been built a hundred years ago.



MACHINES LIKE this bulldozer level off the land and move tons of earth in a day. They are equipped with diesel-operated engines and in the winter months, an operator informed Hydro News, they are not shut off during the lunch hour because they are hard to start.



IT WILL be in this clearing that the main dam for the new Des Joachims power plant will be erected and up these slopes will come the transmission lines carrying the 360,000 horsepower which will augment Hydro's supply of power. Perhaps you can make out the Laurentian Mountains through the mist in the background.



WHEN THE walls and roof are added to this building, an administration force will move in to look after the countless details of office routine involved in directing the many activities associated with the construction of a big development.



DES JOACHIMS

THESE LADS are really as happy as they look for their big delight is to turn out a good meal for the men who are building the new 360,000-horsepower development at DesJoachims, the second largest plant in the Hydro system. Included in the picture are: Earl LaFremiere, "Bill" Gough, C. B. "Bun" Hickey, Percy Nieman, William Jones and Leo LaMarche.



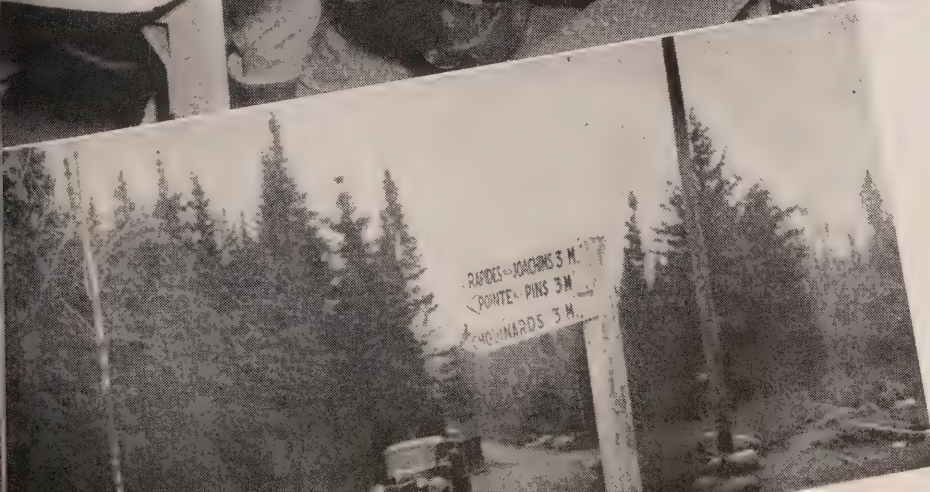
WHEN THESE tents at DesJoachims are completely replaced by more permanent structures, including comfortable living quarters, dining rooms, hospital, recreational and other facilities, this site will assume the characteristics of any well-organized community.



CHATTING OVER a cup of tea, we find Alex Amell, who is a carpenter foreman on the job, and G. V. VanDusk, a surveying engineer, while on right side of the table is Harold Perry, the electrical foreman. All of these men have had many years of Hydro service and their principal topic of conversation centres around their work.



IT'S A long drive to DesJoachims from Toronto and the sign post on the roadside was a "sight for tired eyes." This is the road leading into the Hydro camp. The village of DesJoachims is located over the Ottawa River on the Quebec side.





"There has been many a controversy over who has been first to accomplish something or where it was first done. There have been claims as to where the first transmission line was operated. A couple of years ago reference was made in an electrical magazine to the first transmission line having been between Niagara Falls and Buffalo. Your editorial in the June issue of the News allots credit to San Miguel County, California, for a line of 'several miles' in length, with Deptford to London as a close second. No mention was made of the old Cataract Power Company which generated power at Decew Falls and transmitted it to Hamilton, which company has been stated to have constructed and operated the first long distance transmission line in the world.

"Before trying to settle the question it will be necessary to define the terms used. A transmission line, as the term is used today, applies to a system to transmit power that has been stepped up to high voltage (relatively high) for the purpose of transmission, and then stepped down for distribution. Furthermore, how long is a 'long distance' line?

"I do not want to be too specific about dates for fear of disclosing my age, however, as a small boy attending public school I can clearly re-visualize the building of the substation on Victoria Avenue, Hamilton, opposite where I lived at that time and have a vivid recollection of the big night when the 'power was turned on.' While these references do not fix the year of operation of the Cataract Power Company, they do suggest that this company was in the forefront of this engineering achievement.

"I recall having read in later years that Lord Kelvin had condemned the proposal on the ground of impracticability.

"It would be interesting as a matter of Ontario history to do some digging into the archives of the Dominion Power and Transmission Company, or the files of the Hamilton Spectator in the hope that further information may be uncovered that would bestow honour where honour may be due.—Geo. C. Cousins, Lighting Engineer."

PARSON WOULD SELECT BOYS TO ACT AS HYDRO GUARDS

Sees Suggestion As Possible Curb To Wanton Destruction

"I have just finished reading an article in the June issue of Hydro News about the wanton destruction of street lights and other Hydro equipment which is costly and serious to the people of Ontario. I notice that the Hydro Municipal Commission personnel are puzzled as how the situation should be handled. May I humbly suggest a method.

Since so much money is being spent on replacement I think that a positive policy of prevention the cost of which would be more than offset by the benefits derived.

The Hydro Commission should appoint a full time official to organize through Public and High Schools a system of Hydro Guards from the boys themselves. These boys would be carefully picked by the School staffs and would report the names of boys to their local chief guard,

who in return would first interview the boy with a word of warning, then if he repeated the offense, warn the parents, and then, if there were a third offense the local law enforcement officers should be notified.

Each room in the school and each school would keep a public record of breaks. At the same time there should be some recognition of the school or form that had the lowest casualties for the year.

These guards would not only report vandalism but would report storm breaks, accident breaks etc., and would generally be of service to the Hydro Commission and the public.

It seems to me that the positive approach in these matters would be effective. An ounce of prevention is worth a pound of cure.

If you think that my idea is worth anything pass it along, and if you think that it is practical I should be very pleased to be of assistance.—Sincerely, Rev. H. L. Jennings, Stratford."

FROZEN TO "LIVE" PIPE, BOYS SAVED BY UNCLE: POSSIBLE TRAGEDY IS AVERTED BY PROMPT ACTION

Unusual Incident At Balsam Lake Witnessed By Hydro Man

"Make sure your cottage water supply is well earthed," is another safety precaution that is suggested by an unusual incident which occurred on a beach in front of a Balsam lake summer cottage recently when two young men who were in bathing found themselves in a serious predicament when they grasped a "live" water pipe while standing in the water, and were unable to release themselves.

The incident in question was witnessed by a member of the Commission staff who told Hydro News that only prompt and courageous action on the part of the boys' uncle averted possible fatal consequences.

It appears that the pipe, through which water from the lake was drawn by means of an electric pump, had not been properly grounded. About 30 feet of the suction pipe rested on top of the earth which was dry; the section of the pipe in the water terminated in a valve which

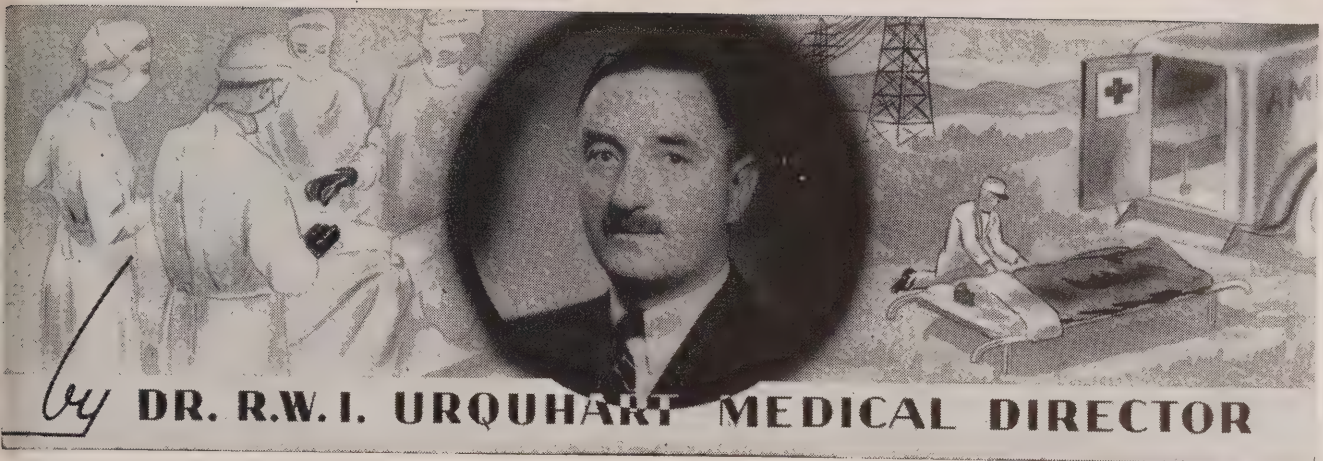
rested lightly on some stones.

An investigation indicated that when the boys grasped the pipe they were "frozen" to it, because their bodies provided a better passage to ground than that provided by the waterpipe, although this actually terminated in the lake. It appears that the wiring to the electric pump was defective and the live wire was making contact with a metal part of the pump. In this way the water pipe became charged with electricity.

Noting the plight of the boys, who were able to call for help, the uncle who was also in the water touched the pipe lightly with his fingers and realized what had happened. He at once shouted for the father of the boys to turn off the power, but before this could be done, he managed after a severe struggle to free the boys from the pipe.

Needless to say, immediate steps were taken to ground the pipe and repair the defective wiring.

Motto is beware of a water pipe you may find in a lake. It may be carrying more than water.



DR. R.W.I. URQUHART MEDICAL DIRECTOR

HOLIDAY HAZARDS

Now that summer has come at last, it seems advisable to mention a few hazards which accompany it. While these hazards are constantly present for those of us who work in the field, they are particularly dangerous to those of us who spend only holiday week-ends or weeks in the country. Lack of precaution may render these holidays very uncomfortable.

The first of these hazards is sunburn. Sunburn is caused by exposure to the ultraviolet rays of the sun, either directly or as reflected from water, sand or rocks. These rays penetrate haze and overcast sky, so that a burn may be acquired on dull, as well as bright days.

The effect of the burn is not noticed at once, but after some hours there develops an inflammatory reaction in the skin which may go on to blister formation. If the burned area is extensive a mild fever may accompany the reaction. In time the inflammation subsides and the superficial layers of the skin peel off.

Fair Types Burn Readily

Some people, particularly the fair types, burn readily, others acquire freckles, and others tan gradually to a dark brown with little suffering. The freckles and tanning are due to an increase of pigment in the skin which is protective in nature. The dark skin of the negro and other southern races is a protective adaptation to the sunny climate in which they live.

The individual who burns therefore must take the sun in small doses. A tan cannot be acquired in one or two days' exposure without considerable discomfort. Ten minutes' exposure at first may be all that is safe. As time goes on,

the frequency and length of exposure may be increased. Protective oils and sun screen ointments are on the market and may be used with advantage. Soothing ointments may be applied if burning does occur.

Intestinal Infections

Intestinal infections are another holiday hazard. They may vary in severity from the mild "summer complaint" to a serious typhoid fever infection. These infections are due to contaminated water, milk or food.

Contaminated water is a common source of infection. The taste and clearness of water is no indication of its purity. Most summer resort owners are now alive to this danger and have their water supplies tested regularly. It does no harm to enquire if the water has been tested and graded "A". If there is any doubt about it, boil the water or use the chlorine testing and treatment outfit, supplied at small cost by the Ontario Department of Health.

If you own or rent a cottage, see to it that the water is tested at frequent intervals. Containers for water testing are supplied free of charge by the Ontario Department of Health.

Contaminated Milk

Contaminated milk is a common source of infection with such diseases as tuberculosis, typhoid and paratyphoid fever, undulant fever and summer diarrhoea. The pasteurization of milk effectively destroys the germs causing these diseases. In Ontario there is a law prohibiting the sale of unpasteurized milk. The pasteurization process consists of the rapid heating and cooling of milk and does not alter its taste or food value. Where pasteurized milk is unobtainable, it may be made safe for drink-

ing by keeping it just below the boiling point for thirty minutes or if one has a thermometer, by heating it to 165 degrees Fahrenheit for 15 to 20 seconds and then rapidly cooling to below 50 degrees. Always keep milk covered and cool.

Contaminated Food Supplies

Contaminated food supplies are also a common cause of summer gastro-intestinal upsets. Food is most frequently contaminated by contact with the common fly. The screening of cottages, kitchens and privies is therefore of utmost importance. DDT may be used with benefit to control the fly menace. Sandwiches, salads, milk desserts, meats, etc., should be served as soon as possible after preparation. They should at all times be protected by a covering. Food which must be kept should be covered and in as cool a place as can be arranged. Food residues and garbage should not be allowed to lie about uncovered.

The usual week-end list of fatalities due to swimming and boating emphasizes the need for care when in and on the water. When you are going swimming, take time to find out as much as you can about the local conditions. Hidden rocks and swift currents are dangerous to the careless diver and unwary swimmer. If you do get into difficulty, try and keep cool. Remember that in drowning, artificial respiration by the Prone Pressure method is indicated. Its immediate and continued application may be the means of saving a life.

Other holiday hazards such as poison ivy, black flies and mosquitoes, etc., have been dealt with in previous articles. Measures for dealing with these need not be repeated here. The necessary remedies are all available and on the market. A little precaution may make your holiday much more enjoyable.

#his and #hat

By The Editor

"**STEP OVER** the rim of civilization. . . . This is the forest primeval . . . Towering white pines edge hundreds of lakes. . . . From Manitoulin Island, north and northwestward, the fisherman is on his very own territory. . . . Wilderness camps nestle on the shores of isolated lakes."

We could go on and on, almost ad infinitum. In fact, during our summer siesta, we may devote some of our time to reading more of these arresting phrases which we found within the colourful covers of the five picture-packed booklets we received from Mary Ainslie, the charming and enterprising Director of the Publicity Branch of the Ontario Travel and Publicity Bureau. With such vivid literature about the hundreds of vacation possibilities of this wonderful province, we could embark upon a make-believe tour. The back door to the garden might become the rim of civilization, the dwarf garden bushes might assume the stately stature of the forest primeval and the bird bath could fit into this dream picture as an isolated lake. As a fellow Scot reminded us, such a tour would be "a most economical vacation." Quite a temptation to be sure! Thanks, Miss Ainslie!

SNAKES ALIVE! While a number of Canadian ladies, bearing symbolic rolling pins on their blouses and coat lapels, were exchanging pleasantries with Finance Minister Abbott and two of his cabinet colleagues at Ottawa, the high prices of certain commodities, a gentleman in Toronto was bemoaning the present high cost of snakes. This business man, whose claim to fame in hobby hall is associated with snakes, blue-blooded pussy cats, monkeys and other assorted livestock, was muttering under his breath when he found that he had to pay \$40 for a Membra snake, a product which he could purchase

formerly for a five-dollar bill. This gentleman thinks it's an outrage and that only a snake in the grass could be responsible. Our friend, Auchterlonie, agrees that it's a considerable investment in coiled cash. But that's not all, this same citizen has been studying the latest monkey catalogues and finds that he has now to pay \$1,200 for a species which could be purchased for a mere \$750 formerly. Auchterlonie rightly describes this as monkey business.

"FOURTH ESTATE." Auchterlonie asked us recently what we meant by saying that we were a member of "The Fourth Estate." He apparently had the impression that we were associated with a syndicate that owned a few acres on the back concession. Just in case there are any other Auchterlonies around, we would like to clear up this point. The British Parliament was assumed to comprise representatives of three estates; the Lords Spiritual, the Lords Temporal and the Commons. One day, however, Edmund Burke, pointing to the press gallery, said: "There sits a Fourth Estate, more important far than them all." No one at all familiar with the ubiquitous influence and all-pervading power of the press would today question the validity of Burke's appraisal.

JET PROPULSION. This idea of jet propulsion is not new. George Cousins, the Commission's lighting engineer, has recollections of the time when, as a boy, he saw this principle applied to a boat. The water, as he recalls it, was drawn in an opening in the stem of the boat and expelled through an opening in the stern. Apparently, that attempt failed. If it had succeeded, the principle might perhaps have been more appropriately designated as "wet propulsion."

FOOD FOR THOUGHT. On the back of a menu in a Yonge Street res-

taurant are a few of Longfellow's lines which read: "The talent of success is nothing more than doing what you can well—and doing well whatever you do." Immediately below these lines in small type is the message: "We regret we cannot assume responsibility for lost or mislaid articles."

FETE A. K. MCINTOSH. Down in Cobourg which, nearly twenty years ago attained national prominence as the scene of the memorable legal action initiated by the late General Sir Arthur Currie against an Ontario newspaper, the members of the local public utilities commission tendered a complimentary dinner to A. K. McIntosh upon his retirement as manager. Mr. McIntosh, we are advised has joined the Commission's hydraulic department and he will be serving Hydro at Des Joachims on the Ottawa river where an important new development is now under construction. His many friends at Cobourg and on the Commission staff join in extending sincere wishes to Mr. McIntosh as he assumes his new duties within the Hydro family.

AT THE EX. Someday, perhaps in the not too distant future, the Canadian National Exhibition will be extended to the west of the present site on property now owned by Toronto. That additional space is required is indicated by the fact that this year there will be 1,100 exhibitors and the space they will occupy could have been sold four times over. Visitors this year will see many changes in the Ex whose buildings were used by the armed forces during the war years. A face-lifting and streamlining of display space in these buildings is now being completed. The over-all result will be a pleasing uniformity in the interior design of the buildings. Incidentally, we note the price has been boosted by ten cents this year. Don't suppose there's any use trying to sneak in on Children's Day!



Hydro HOME FORUM by Edith Emma Muir HOME ECONOMIST

The world is ours these days, with fruit and vegetables on every side. Let's use them fresh as often as we can; let's do as much canning and preserving as our sugar supply will allow.

Freezing varieties of fruits and vegetables is a simple and inexpensive method of preparation and preservation. Some sugar appears to be necessary to retain maximum colour, flavour and food value of fruits. A cool syrup in the proportion of 6 cups sugar in 4 cups water holds the shape of frozen fruit. (When fruits are frozen without sugar, it should be added before thawing, using about one pound of sugar to four pounds of fruit.)

As for jam and jelly-making, the finished product will be up to your expectancy if you measure carefully the sugar and fruit and calculate the cooking time by a clock with a minute hand—especially if you use commercial pectin.

There's nothing much you can do about preserves if the product becomes cloudy, "weepy" or full of crystals. The result is usually caused from too much sugar and too long a boiling period. If wax is put on too heavily on warm jelly, it may not set firmly. Put a thin layer of melted paraffin, then another layer when cold.

Tiny mint leaves placed in the ice cube tray sections makes an appealing addition to your hot weather drinks.

Day-old whipping cream makes a finer textured ice cream. Whip until it can be held around the beater. The sugar should be rolled fine, then measured and sifted into the mixture as it is beaten so that a layer of ice will not form at the bottom.

When you prepare halves of cantaloupe and put them in the electric refrigerator until serving time, they should keep their aroma to themselves. Try placing a piece of wax paper on the cut sides.

JELLIED BLUEBERRIES

- 3 quarts blueberries.
- 2 cups sugar.
- 1 cup water.

Make a syrup of the sugar and water and boil for 5 minutes. Add the cleaned berries and cook for 20 minutes. Pour into sterilized jars and seal hot. Yield: Approximately 3 pints.

BAKED ALASKA

This is the dessert served at a dietetic convention which we thought scrumptious.

- 4 eggs whites
- 4 tablespoons sugar.
- 1 brick ice cream
- Plain sponge cake.

Make certain that ice cream is frozen very hard. Cut cake into thick slices $1\frac{1}{2}$ " cut out center (about $\frac{1}{2}$ " deep) leaving edge on sides. Put slices of ice cream inside. Pile on meringue over sides as well. Brown quickly in 40 degree oven for a moment. If desired, top with fruit just before serving.

To prevent juice from boiling out of canned fruit and smoking in the oven, tie a strip of cheesecloth around each jar. It's easier to do this than clean the oven, you will no doubt agree.

If you are one of those who feel that Crabapple Jelly just isn't right without a faint flavour of rose geranium, add a leaf of the sweet scented plant to the cut-up apples before simmering with water. Just one word of warning: be very careful about how much you use—five crushed geranium leaves for 5 cups of juice is enough for me.

Recipe for 12 glasses of Apple Jelly: Measure $7\frac{1}{2}$ cups ($3\frac{3}{4}$ lbs.) sugar and

5 cups ($2\frac{1}{2}$ lbs.) prepared juice and mix in a large saucepan. Bring to boil over large electric element turned high, stirring constantly. At the first sign of a high rolling boil stir in $\frac{1}{2}$ bottle of commercial pectin, watch mix. Calculate $\frac{1}{2}$ minute of rolling boil, remove from electric element, skim, and pour quickly into hot sterilized jars. Seal. (It takes 3 lbs. (2 qts.) crabapples cut-up with 4 cups water and cooked for 15 minutes to make 5 cups juice).

Since black currants are at the top of the list of our foods rich in Vitamin C, we include a simple, sugarless method of canning them: Wash and stem currants. Crush part of the fruit in the bottom of the preserving kettle, add rest of fruit and just enough water to prevent burning. Heat slowly to extract juice. Pack in hot sterilized pints, partially seal and process in electric oven at 275 degrees for 35 minutes. Complete the seal as soon as removed from oven. Cool and label.

White cabbage, cauliflower and white onions contain pigments called flavones. If water used for cooking is extremely "hard," add a few drops of lemon juice or a pinch of cream of tartar. Cook vegetables only until tender. For example, 1 head of shredded cabbage requires about 8 minutes.

Corn is the vegetable which "tells" you that it has been cooked too long because it is tough to eat. Pop into boiling salted water for 8 minutes or ten minutes at the most. Keep water boiling on "high" heat.

Scrape down the sides of bowl with a rubber blade while beating cake mixtures, do not overwhip the centre.

When wallpaper peels from the wall, apply diluted library paste to reverse side of paper and to the wall. Let it dry till sticky, then smooth paper into place with a clean cloth or piece of blotting paper.

ACTON

(Continued from page 11)

name of Danville seemed to settle on the town as most of its affairs were run by a clerk in the first store whose name was Dan. The next name the community bore was that of Adamsville. This was most likely because of the large influential Adams family who were also prominent in local government and social life.

By 1844 a post office was obtained for the hamlet, and Robert Swan, who is buried in the old pioneer cemetery, used his influence and was successful in having the town named Acton, supposedly after an English village in Northumberland. Actually, the settlement remained as part of the township until 1873 when by charter it was incorporated into a village.

As is the rule with small places, the first industry established was the grist mill that obtained power from a little creek which was later dammed up to form Fairy Lake. There was always a boy employed at the mill who carried buckets of grain up a ladder and dumped them in the bolt.

Then came the tanning industry. Several families were engaged in the trade and in 1865 George Beardmore came over from Hamilton and consolidated them under his own name. Today the Beardmore tannery employs over 600 people, and it is said to be the largest firm of its kind in the British Empire.

Hydro News paid a visit to the Baxter Laboratories where special medical intravenous solutions are made, and it must be confessed that more time was spent in watching the "testing" rabbits than was spent in the spotless laboratories. In many layers of hutches the rabbits had learned to drink their water out of glass straws in a bottle. This served as a dual purpose in keeping the cage clean and also the water fresh.

Making gloves has also been another permanent industry in Acton and the business dates back to 1868. Gloves made in Acton are known across Canada and there again a sizeable staff is employed.

Commission Members

C. M. Hansen, who is the master mechanic for Beardmore's, is serving his eleventh term on the Hydro commission and is at present the chairman, while J. R. McArthur, foreman of the Acton Free Press and Milton Canadian Champion, has been associated with the Commission for nearly 5 years. The other member is reeve F. J. McCutcheon.

On the staff of the commission are Miss Jessie Walker who comes from Winnipeg, John McGeachie who is from Glasgow, Kerwin McPhail, a home town

boy who is learning the business, W. D. Mason, who was recently appointed to the staff, the superintendent, Charles W. Wilson, and John Lambert, waterworks superintendent.

Mr. Wilson is the mainstay insofar as the actual operation of the commission is concerned. He is familiar with every foot of the fourteen miles of Hydro lines. The reason? He installed every piece of it himself.

Walking up the main street in Acton with Mr. Wilson is just like holding a reception where you say hello to everybody. For Charlie Wilson is one of the best-liked men in town and there isn't a house that he has not been in.

Not only is he a top-flight public relations man for the local utilities but he is an able technical man. He built his own meter testing board with sliding lamps and he installed an electronic eye which automatically turns on the street lights when the density of daylight falls below a certain point.

The Public Utilities office is located in the Y.M.C.A. building at Acton, which is the smallest place in Canada to have such an organization located within its confines. There are five churches, public and high schools, a community hall and a good library.

The Free Press, the area's only paper, is edited by Arlof Dills who took over in 1928 when the late H. P. Moor, who was known by his column, "The Old Man Of The Big Clock Tower," retired. Mr. Dills also published the paper in Milton.

A few years ago when the town was celebrating an anniversary, a visitor said: "You've got a fine community spirit in Acton, folks. You don't find such a spirit in many places. It's taken over a hundred years to get it. For goodness sake, don't lose it."

THE FLAG FLIES HIGH

Sometimes waving gently, sometimes slapping and wrapping itself around the pole in a stiff breeze, the Union Jack (picture on page two) flying over the H.E.P.C. Administration Building in Toronto, has become a landmark in the University Avenue and surrounding area.

Located on the roof of the eighteen-storey building, this 12 by 6-foot flag flies every day that the Commission is officially open.

On checking with the administration department, Hydro News found that a stock of flags is kept on hand so that when one becomes ragged and torn in the breeze it can be immediately replaced, while the damaged one is returned to the supply house for repair. Usually three or four new flags are required each year.

HYDRO'S SKILLED FORESTERS

(Continued from page 6)

For a fleeting moment the tree stood erect. A red-headed woodpecker, warned by instinct of impending catastrophe, ceased his tap-tap-tapping and flew away. From high overhead came the sound of rustling leaves stirred by the light breeze which swept across the road. It was the elm's last breath.

"There she goes!"

The men in the field loosed the cable as the tree fell straight away toward them.

It was a perfectly executed job. But the inspection of the stump showed that the big elm would have "jumped" badly if the safety ridge had not been left when the wood was chopped out of the first cut.

You have read stories of cannon getting loose and running amuck on the decks of those old frigates which ploughed the seas in Nelson's day? Well, within a narrower compass of destruction, a big "jumping" tree is something like that. You never know which way it is going to bounce or roll or whom it may trap beneath its terrifying weight unless proper precautions are taken.

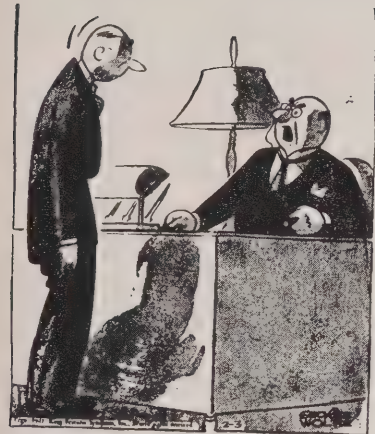
Co-operation 100 Percent

The owner of the property adjoining the highway where the tree was brought down had co-operated with Hydro 100 per cent. He had even given the forestry crew permission to burn the brush where it lay, thus saving the time, trouble and expense which would have been involved in its removal. The wood was left for use of the property owner.

And this, according to the superintendent of the forestry branch, W. Ray Hunter, is typical of the hearty co-operation his crews are now receiving from the farmers of Ontario even where their own trees are concerned.

"At first we had a bit of trouble here and there," said Mr. Hunter. "There is something about an old tree, especially if it is a well-known landmark in a locality, which naturally makes people stubborn about its removal. But farmers have come to realize that we only remove a tree when we have to—that we do it in their own interests as Hydro consumers and that, in our line clearance and removal work, we are co-operating with the government in keeping the highways safe for traffic."

Lighter Lines



"Don't 'yes' me! I want to know what you think—even if it costs you your job!"

A patient called his dentist for an appointment. "I'm sorry," said the dentist, "but I can't take care of you now, I have eighteen cavities to fill this afternoon." Then he hung up the phone, picked up his golf bag and left his office.

If you steal from one author it's plagiarism; if you steal from many it's research.—Wilson Mizner.



"What am I doing in the pantry?—Just putting a few things away, Mom!"

*I would I were beneath a tree
A-sleeping in the shade,
With all the bills I've got to pay,
Paid.*

*I would I were beside the sea,
Or sailing in a boat,
With all the things I've got to write,
Wrote.*

*I would I were on yonder hill,
A-basking in the sun,
With all the work I've got to do,
Done.*

He took his misfortunes like a man—he blamed them on his wife.

They tell me Jones has a right good voice. Is he cultivating it? I can't say about the cultivating but he certainly irrigates it regularly.

Man, a sentimental animal, has now and again referred to the horse as "man's best friend." It would be interesting to hear the horse's version of this.

A negro minister discovered two men playing cards on Sunday and for money. "Rastus," said the minister, "don't you know it's wrong to play cards on the Sabbath?" "Yes, passon," answered Rastus ruefully, "but believe me, I's payin' for mah sins."

I never knew any man in my life who could not bear another's misfortunes perfectly like a Christian.—Pope.

According to record, the world's most conceited man was the fellow who celebrated his birthday by sending his mother a telegram of congratulation.

Man is the only animal that blushes. Or needs to.—Mark Twain.

An irate woman called her grocer on the phone saying: "I sent my little boy for three pounds of peaches and you sent me only two pounds."

"Madam," was the reply, "my scales are accurate, I'd advise you to weigh your little boy."

The optimist proclaims that we live in the best of all possible worlds; and the pessimist fears this is true.



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"When are you gonna make mud pies, Mummie? Daddy said you were getting ready to dish up the dirt!"

Two fighting Irishmen were brought before a judge who said: "Why don't you two settle this case out of court?"

"Sure that's exactly what we were doin'," said one, "and the police came along and interfered."

"Civilization totters" say the pessimists. "But it totters steadily onward" cheerfully respond the men of optimistic mind.



"Never mind the 'bravo, bravo!' What about a nickel?"

CITY LIGHTS

(Continued from page 18)

experimental units it was decided to go ahead and put in the new lights throughout the city. On all heavy traffic streets the luminaires are placed every hundred feet, on opposite sides of the street, each having a 500-watt bulb. Each light extends 8 feet from the curb. On residential streets each luminaire is designed to hang over the centre of the street. In these areas the lights will be 200 feet apart and will carry 300-watt lamps. Both types of light are 25 feet above the roadway.

Five Times Brighter

The whole changeover involves putting up 36,000 luminaires at an approximate capital cost of \$2,000,000. When completed the illumination on roadways and sidewalks in residential areas will be five times brighter than that of the old lighting, and on traffic streets including University Avenue, it will be over seven times brighter. When this present plan in Toronto is completed possibly within two years—the illumination delivered on the roadway will be well above the recommended average of the Illuminating Engineering Society.

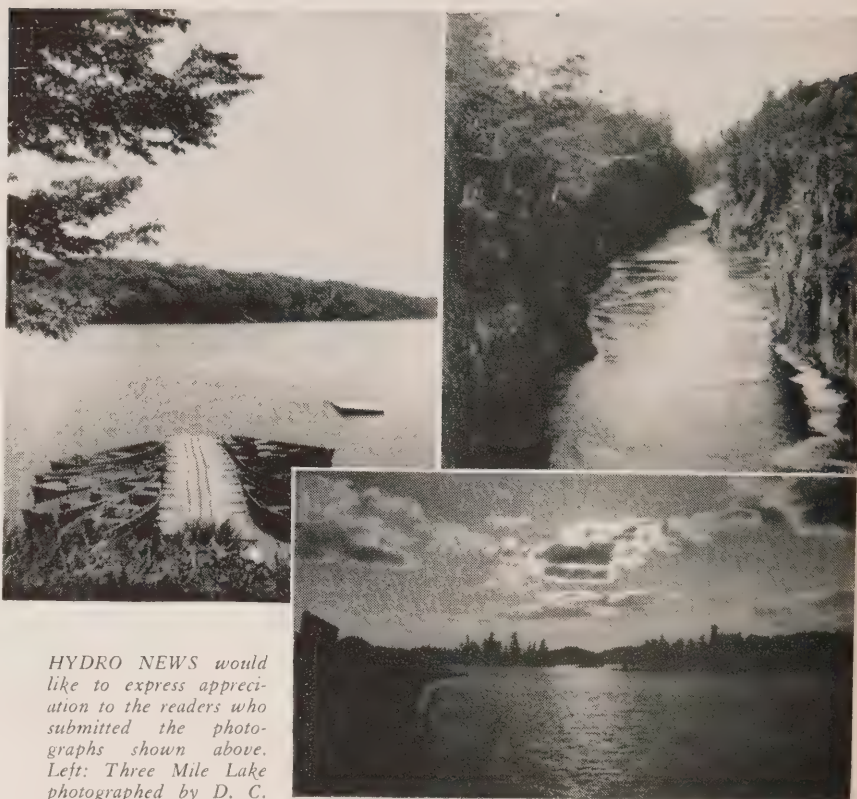
Careful Study Made

The bracket design for the new lights was achieved by collaboration with manufacturers and the material used is aluminum alloy. Although Toronto is without a formal experimental laboratory, the 300 preliminary units served a similar purpose and a careful study of them was very helpful in making the final plans. The fundamental principle of the new light is that it emits a controlled, correctly-directed light instead of a scattered light which is not controlled and may cause a glare in the eyes.

Separate System

Toronto's street lighting system is separate from the distribution systems that supply commercial and house lighting, and has its own primary lines and transformers. There is a primary high voltage switch located at seven substations in the city. Each of these switches is controlled by the operator of the key station who receives his orders from the load despatching engineer in the head office. The whole street lighting system at present accounts for approximately 6500 kilovolt-amperes and when the new lights are all installed that figure will be raised to approximately 10,000 kv-a.

PHOTOGRAPHS FROM READERS



HYDRO NEWS would like to express appreciation to the readers who submitted the photographs shown above. Left: Three Mile Lake photographed by D. C. Thomson of the Grimsby Hydro-Electric Commission; Right: "Tunnel Site" on the Mississagi river, taken by F. K. Dalton of the Commission laboratory; Bottom: Cooks Lake, seven miles west of Timmins. P. Ramsay of the Canadian Standards Association, who took this photograph, says that it was snapped in the early evening and over-developed to get a moonlight effect.

IT'S A ROAD – NOT A RIVER



THIS ILLUSTRATION, taken during April, shows part of the flooded area below Plantagenet. Note the H.E.P.C. 8,000-volt line pole which was broken off by ice. According to G. R. Webb, superintendent of the Plantagenet Rural Operating Area, the water was 8 feet deep at one point on the county road along this line.

HYDRO AT WORK

Electric Trolley Bus



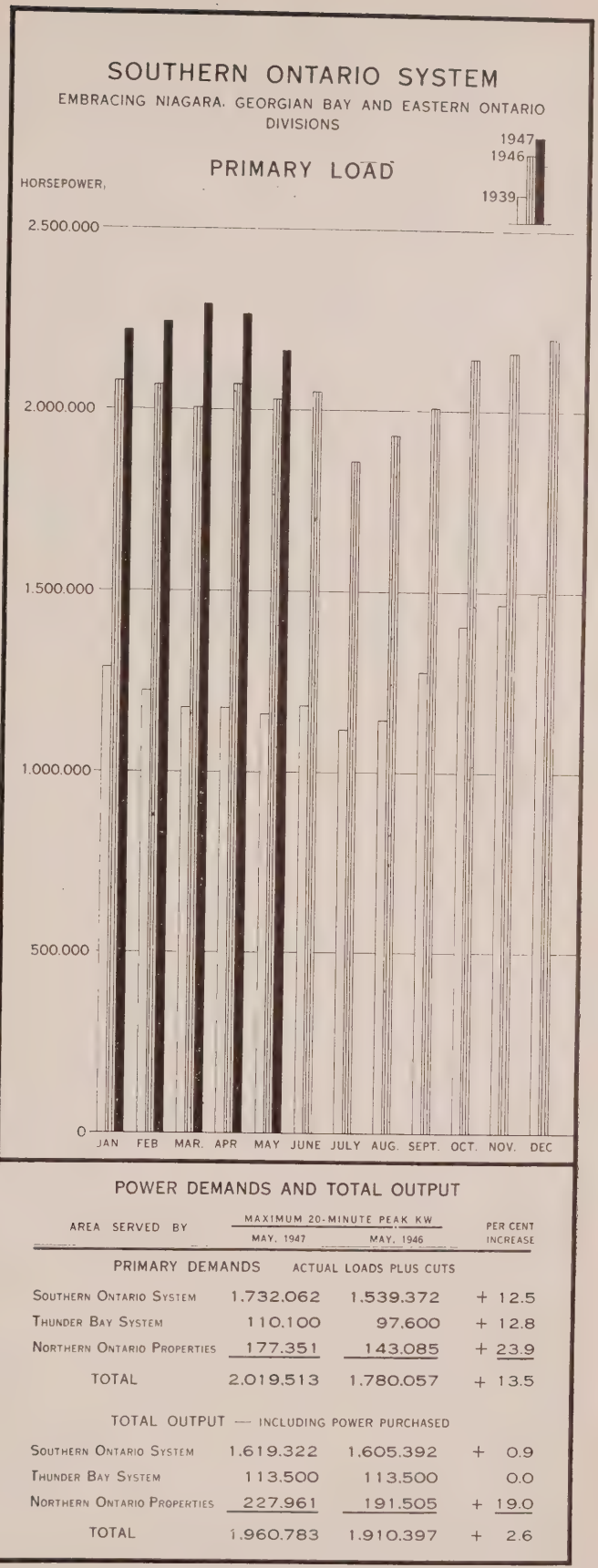
In the list of up-to-the-minute uses for electricity should be added the new trolley coaches recently placed in service by the Toronto Transportation Commission. They are the first of their kind in this city and are creating considerable interest both for that reason and because of the efficiency and smoothness of their running.

The vehicle looks, steers and handles like a gasoline bus but it is powered by a 140-horsepower electric motor and receives its energy from overhead trolley wires. It can cruise about 14 feet on either side of the trolley wires permitting it to draw over to the curb for loading and unloading.

A special point of interest is that over ninety per cent of the labour on these buses was done in Canada. The body is almost entirely of aluminum and each bus has room for 44 passengers. The aisle is very roomy, being about five inches wider than those on most gasoline buses.

The lighting is specially designed for comfortable reading with an individual fixture over each cross seat focusing a flood of light on the reading position. The heating is generated by the motor and there are other auxiliary electric heaters, all thermostatically controlled. The driver has a special electric heater under manual control for defrosting the windshield.

In other words these buses are the last word in safe, modern, comfortable and efficient transportation. The first service has been inaugurated on Lansdowne Avenue but by fall there will be several others.





WHAT NEXT?

What's scarce now? Lumber, nails, plumbing or wiring equipment . . . the list is endless. No sooner is one problem solved than another comes along. The scarcity of materials has delayed the completion of many new Hydro projects. This, combined with a greatly increased demand, has limited the power supply.

Never has Ontario used so much electricity as now . . . not even during the record-breaking war years. Another half million horsepower could be utilized almost immediately, if available. Hydro plants to generate that much and more have been planned and are under construction. Some additional power will be delivered this year . . . more in 1948. But it will be 1950 before the big new Hydro plant on the Ottawa river can start to pour its 360,000 horsepower into the Hydro system.

Why so long? It's because of the shortage of building supplies . . . a tremendous quantity of construction materials and electrical equipment must be sought and bought to build such a plant. The Ottawa river development alone requires a concrete dam nearly half a mile long, in addition to the power house and the thousands of items of electrical equipment, small and large. Building a new power plant often creates an entirely new community. It takes a long time . . . especially when materials are as scarce as they are now.

Few places in the world have as much electricity available per person as Ontario has. However, it must be conserved so that new homes and industries will all receive their share . . . so that the wheels of our factories will be kept turning and maximum employment and production maintained . . . use Hydro wisely and there will be enough for all.



DON'T BREAK
INSULATORS



DON'T BREAK
STREET LIGHTS

THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

HYDRO News



HORSEPOWER ON HOOF



Over 2,000
tons of concrete are
poured daily into this Hydro
dam 200 feet high, half a mile long

Harnessing Another 81,000 Horsepower for Hydro

People sometimes ask us what we are doing about providing more electricity for Ontario. Many know how close we are now to using up all our present supply.

Since the end of the war, Hydro's peak load demand has increased approximately 500,000 horsepower or more than 25% of the highest wartime demand, and is still mounting.

What are we doing about it?

Above is a part, but only a part, of the answer. It shows the great power development at Stewartville, on the Madawaska River in Eastern

Ontario, which was started many months ago when materials and labor were in even shorter supply than now. It will give you 81,000 horsepower commencing next year. With other Hydro developments being rushed to completion, an added 500,000 horsepower will be available in the next five years.

In the meanwhile we must all use Hydro sparingly so there will be enough to go around.

Save
ELECTRICITY



in the KITCHEN

Save
ELECTRICITY



in the
LIVING ROOM

THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO



THE HYDRO - ELECTRIC POWER COMMISSION OF ONTARIO

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THE FRONT COVER



A READER with a sense of
humour suggested recently
that we use a picture featuring
horsepower on the front cover of
Hydro News. The reader in ques-
tion gave us the idea for this
month's reproduction entitled
"Horsepower on Hoof". Taken by
Alan Walker, Toronto photogra-
pher, this interesting camera study
shows a two-day-old foal—a Palo-
mino—and its mother, a thorough-
bred racehorse. Oh, yes, Hydro
is represented here, too. In the
background is the pumphouse
where drinking water is pumped
by electricity.

Volume 34

September, 1947

Number 9

CONTENTS

Queenston-Chippawa Plant	- - - - -	2
Page Three	- - - - -	3
Hydro's Ruling Queen	- - - - -	4
Many Men Win Their Spurs	- - - - -	8
Hot Under The Soil	- - - - -	12
Hydro Home Forum	- - - - -	15
Midland	- - - - -	18
Around The Hydro Circuit	- - - - -	22
Dr. R.W.I. Urquhart's Page	- - - - -	23
Commission Setting All-Out Pace	- - - - -	24
Tree Surgery	- - - - -	26
Tribute To Memory Of Sir Adam Beck	- - - - -	29
Appointments Of H. D. Rothwell And W. R. Harmer	- - - - -	30
Hydro At Work	- - - - -	31
Monthly Load Summary	- - - - -	31
Municipal Loads	- - - - -	32





Picture of the Month

THERE'S AN interesting picture. Recognize it? Yes, of course, it was taken at the Queenston-Chippawa plant—the Commission's largest development which generates in excess of half a million horsepower. Hydro's athletic photographer, Burt Helling, got this shot from the top of the cliff overlooking the generating room and the Niagara river.

POWER PROBLEMS

"Unexpected" and "unprecedented" are the two words which have been used to describe the power supply situation confronting Hydro at the present time.

To fully appreciate this situation it is necessary to have a background or understanding of the important factors involved and their cumulative effect upon the Commission's operation under today's conditions.

In the first place, it will be recalled that upon the outbreak of war in 1939 Hydro was ready, and that almost overnight, its entire resources and facilities were marshalled to serve Canada's war effort.

The vital part which Hydro and Hydro personnel played during these grim years is now history. There are, however, two factors which have a definite bearing upon the problem which the Commission has been called upon to face today. In fact, in the first place, during the war years, all regular planning and construction for future power demands had to be suspended. Only the most essential work associated with the needs of the war effort were undertaken. Secondly, it was the accepted belief, not only in Ontario and throughout Canada but in other countries, that the end of the war would bring a sharp recession in the power load. Such a period was anticipated as a welcome and necessary "breathing space" which would permit the rehabilitation of hard-worked generating, transmission and distribution equipment and facilities and the resumption of normal planning for peacetime needs.

These expectations did not materialize. There has not been a recession in load. On the contrary, since the end of the war, it has increased by 25 percent and is still increasing rapidly. Therefore, the magnitude of the current problems is obvious. Just how obvious it is an averaging up of the load figures for 1939, 1945 and the present year, 1947 clearly reveals.

Let us first take a glance at the loads supplied to basic industries which supply the foundation materials for our manufactures and are, therefore, of vital importance to the progress and development of the province. Foremost among these industries is STEEL.

In 1939 the combined mill and furnace loads supplied to three typical steel plants were approximately 50,000 horsepower. In 1945 the load figures were about 160,000 horsepower—a wartime increase of more than 200 percent. Instead of falling off after the war when the manufacture of munitions ceased, the load increased and in 1947

reached approximately 184,000 horsepower, an actual increase over the last war year of nearly 15 percent.

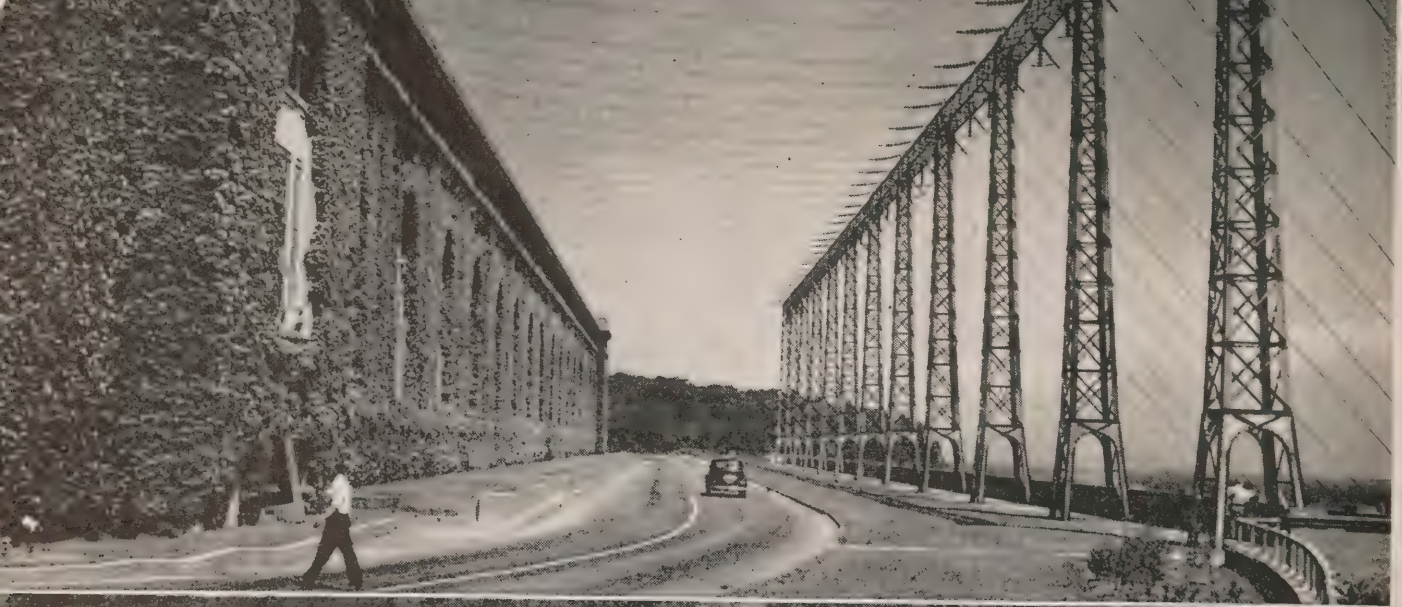
What has been happening in the "steels" has also been happening in other essential industries. Power loads are steadily increasing. Take the "abrasives." In 1939 three typical plants were using approximately 30,700 horsepower; in 1945, 48,000 horsepower; TODAY, about 78,600 horsepower. Two typical chemical industries in 1939 were using loads of approximately 129,000 horsepower. In the last war year, 1945, these loads had risen to approximately 159,000 horsepower. In 1947 they had increased to 164,000 horsepower. In 1939 two representative non-ferrous industries were using loads of 43,000 horsepower. In 1945 their loads were up to about 139,000 horsepower. By 1947 they had further increased to approximately 141,000 horsepower.

The increased use of electricity in industry has been accompanied by heavy demands for more power by commercial, domestic and rural consumers. Figures for June, 1939, for the Southern Ontario System alone, show that the municipal demand load was about 782,000 horsepower. In June, 1945, it was about 1,180,000 horsepower. In June of this year it was more than 1,400,000 horsepower. In 1939, the rural load demand was about 63,000 horsepower. In June, 1945, it was approximately 108,500 horsepower. In June, 1947, it was more than 161,000 horsepower.

This general all-round increase in power demands is a problem with many implications. From the point of view of power development the Commission is losing no time and sparing no effort in coming to grips with the situation. The construction programme now proceeding is the greatest in the history of Hydro and, when completed, will add 900,000 horsepower to present power supplies and will increase the Commission's generating capacity by approximately 50 percent.

These developments will, however, take some time to complete. In the meantime, it is obvious that it would be unwise in the interests of all consumers to seriously curtail power supply to essential industries which are doing their utmost to supply material in order to catch up with a formidable back-log of construction as well as to meet existing needs. It follows, therefore, that economies in the use of electricity during the peak load winter periods must be looked for among all classes of consumers who will greatly benefit themselves by not wasting power and thus enabling industry to supply them with the goods they need.

Hydro's RULING QUEEN



By The Editor

Still the majestic, ruling queen of all the Commission's hydro-electric developments, the commanding 500,000-horsepower Queenston-Chippawa plant on the Niagara river is a place where a quarter of a million people from many lands have signed the Visitors' Book within the past quarter century.

Homage to this world-famous symbol of Hydro in Ontario has been paid in many tongues and those who have walked its marble halls deep in the heart of the towering cliff include the late Earl Baldwin and Rt. Hon Ramsay McDonald, former Prime Minister of Great Britain; Lord Allenby, Lord Beaverbrook, King

Gustav of Sweden and many other celebrities of international repute.

However, this is not a mecca of interest for celebrities alone. The Queenston plant every year is "a must" on the holiday list, not only of tourists from other lands, but of thousands of people in Ontario who enjoy the privilege of using electric power under public ownership.

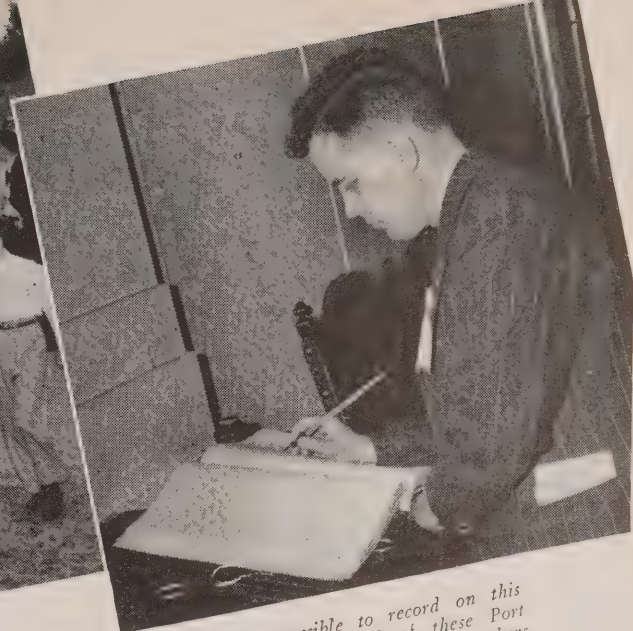
Old and young alike are to be found in the daily parade of sightseers who come to the plant where they sign the Visitors' Book and, accompanied by guides, are conducted through this—the greatest of all Hydro developments. Just recently Hydro News was on hand when some 90 high school students, both boys and girls, accompanied by the principal,

H. G. Edgar, and four teachers, came by bus from Port Dover to visit this development.

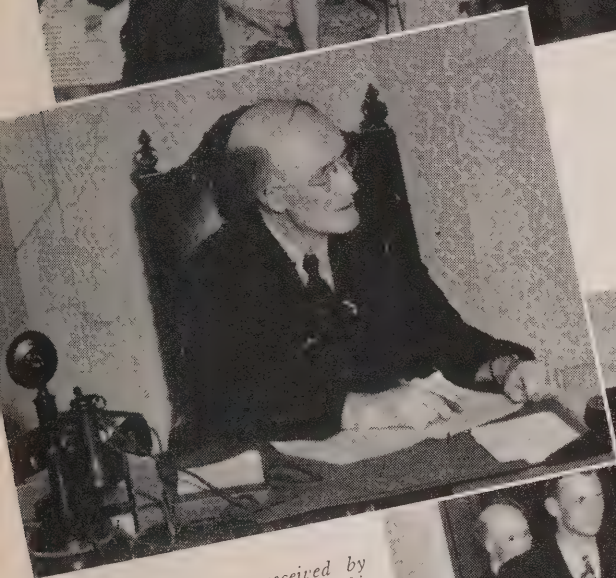
After they had trooped out of their special buses, the young visitors were received at the entrance to the impressive ivy-covered building by smiling, friendly John A. Robertson who during his twenty-seven years' service with the Commission, has seen thousands of visitors enter the portals of the Queenston-Chippawa plant.

Organized Into Groups

Without delay, the students were organized into small groups, a guide assigned to each group and they were on their way. First, they saw the screen



IF THIS were a sound picture it would be possible to record on this page the cries of excitement which marked the arrival of these Port Dover high school students along with their principal and four teachers at the Commission's Queenston-Chippawa plant. H. G. Edgar, the principal, signs the Visitors' Book.



THE YOUNG visitors were received by John A. Robertson, who during his twenty-seven years of service with the Commission has greeted thousands of people to the Queenston-Chippawa development.



THE STUDENTS were soon organized into small groups, with a guide assigned to each group. Here some general information is "taken in" before the tour actually gets started.



THE FIRST stop was the screen house where it was explained that the water flowing into the penstocks was screened so that any debris which might damage the turbines would be trapped in the trash racks.

(Continued from page 4)

house where, as the name implies, the water flowing into the penstocks is first screened so that any debris which might damage the turbines is trapped in the trash racks. From the screen house, the excited visitors were conveyed into large elevators and down seven floors where they found themselves in "marble halls" or a 200-foot marble-walled tunnel which leads to offices and to the nerve centre of the plant—the control room where, upon entering, the students "gave" with a series of uncontrolled "ohs" and "ahs." It is undoubtedly an impressive room, especially to the layman who sees it for the first time. Ladies would, no doubt, note with approval, the restful green of the newly-painted walls but the eyes of the young men in the party were immediately drawn to the sleek, white array of control panels which reached round one side of the room in a semi-horseshoe shape. On these panels they noted the series of mysterious looking switches, buttons and multi-coloured lights, while in the background they noted the high vertical panels with their numerous dials and graphs which, to the trained operators, tell at a glance the second-by-second story of the generation, transmission and distribution of Queen-Chippawa's half million horsepower. The students stood enthralled as they watched the operators going about their work quietly and efficiently.

Drop Of 200 Feet

Leaving the control room, they were conveyed into another elevator, this time for a drop of 200 feet to the generator room which is nearly 600 feet long by 135 feet wide. Here they saw the ten, humming, giant generators, each of which weighs 500 tons and which together can generate in excess of half a million horsepower for use in factories, homes, hospitals, on farms and for many other purposes throughout the surrounding highly industrialized area and as far west as Windsor and Sarnia.

Quietly and intently, the students listened while they were told, briefly and in simple language, about the operations in the power plant. They learned of the generation of hydro electric power using falling water to spin a shaft; that the greater the fall means more driving force to spin the shaft and that a greater quantity of water makes it possible to spin a greater number of shafts or larger turbines to produce more electricity. In other words, it was pointed out, the amount of power that can be produced depends upon two factors—the flow (or quantity of water passing) and the head available. Head, it was explained, means the vertical distance the water can be made to fall.

Flow, the students were informed, is usually expressed in cubic feet per second, known, as a rule, as "second feet." Head which is expressed in feet, may be a natural head. A waterfall, for example, it was explained, is a natural head, while a dam constructed across a waterway to raise the water level would create an artificial head. At the same time, head may be created by combining both natural and artificial features.

Determining Horsepower

When the question of horsepower was discussed, one student asked how it was possible to determine the horsepower a plant could generate.

"Well, it's this way," smiled one of the engineers, "the approximate number of horsepower available can be determined, in the case of high head plants, by multiplying the flow, expressed in cubic feet per second, by the head in feet and dividing the answer by ten."

Next, the students were given a few highlights on the building of Queenston-Chippawa—Hydro's largest plant. They were told that what is known as the intake structure had been built in the Niagara river at Chippawa above the Falls and that the Welland river had been deepened and enlarged with a resultant reversal of its flow for four miles. Next, with the aid of steam shovels, dredges, an electric railway and a corps of workmen, directed by Hydro engineers, a canal, $12\frac{3}{4}$ miles long, had been created between Montrose on the Welland river and the forebay of the plant located at the top of the cliff which overlooks the power house about 350 feet below.

The visitors learned how the water from the forebay, after passing through the screen house, sweeps down the penstocks which are 383 feet in length and 16 feet in diameter and which are imbedded in the cliff. At the end of the penstocks, the water, under pressure, passes through a passage and makes an impact with the blades of the turbines, causing the latter to rotate at a high speed.

Below the giant generators, the young visitors stood fascinated as they watched one of the shining turbine shafts revolving almost faster than eye could see. At this point, an engineer explained that the force of the water turning the turbine produced the mechanical power which caused the rotor or revolving part of the generator to revolve inside the stator or stationary part, thus generating electricity that was then passed through transformers that transform or "step up" the voltage from 12,000 volts to 110,000 volts for transmission to main transformer stations.

When they went out on the roof of

the plant, the students could see the transmission lines reaching up like thick strands of black thread from the roof of the powerhouse up the face of the cliff beyond which these lines are gathered under the giant arms of high towers which stride across the countryside on stilts of steel to bring the power to the main transformer stations and then over distribution lines to farms, homes, factories, hospitals and to make available the benefits of low-cost power for many other purposes.

Magnificent Panoramic View

Still standing on the great ramparts of this world-famous Hydro plant, the students looked over the brick wall and enjoyed a magnificent panoramic view of the American shore line. Far below the Niagara river bubbled, whirled and frothed on its restless way.

"Isn't that super?" exclaimed one freckle-faced young lady.

"Oh, Boy," agreed a young lad.

While standing on the roof of the powerhouse, the students also learned a few interesting facts concerning the tremendous undertaking which had been involved in building the Queenston-Chippawa plant. They were told how in creating the $12\frac{3}{4}$ -mile canal fifty-three million tons of earth and rock had been removed.

"Must have been a lot of concrete used," one young lad remarked.

"About 680,000 tons, I would say, son," answered an engineer.

There were many other questions—some of them really "toughies"—even for the Hydro engineers. At the end of the tour, however, these young people from Port Dover left with many interesting and graphic impressions of the Queenston-Chippawa plant.

On their tour the visiting students were accompanied by O. S. Luney, assistant superintendent, Niagara Falls, while they also met L. W. Maybon, first operator at Queenston-Chippawa, and other members of the Commission staff in addition to the guides.

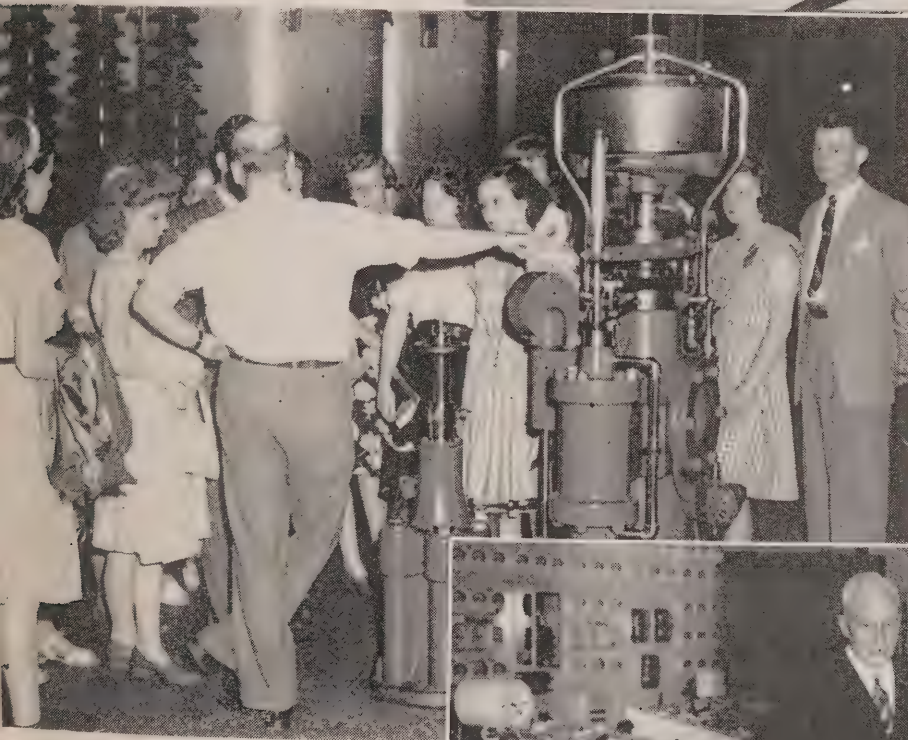
H. G. Edgar, the principal, who signed the Visitors' Book, said that the visit had been a most memorable experience, and Miss Elizabeth Knapp, one of the teachers, told Hydro News that she had been very greatly impressed not only by the development itself but by the cleanliness and neatness in evidence throughout the plant. "Why," she exclaimed, "you could eat off the floor!"

As the boys and girls were piling into their chartered buses, one pleasant looking young fellow with roguish eyes was heard to remark: "Well, that was really something. The kids back home are sure going to be sorry when they hear what they missed."



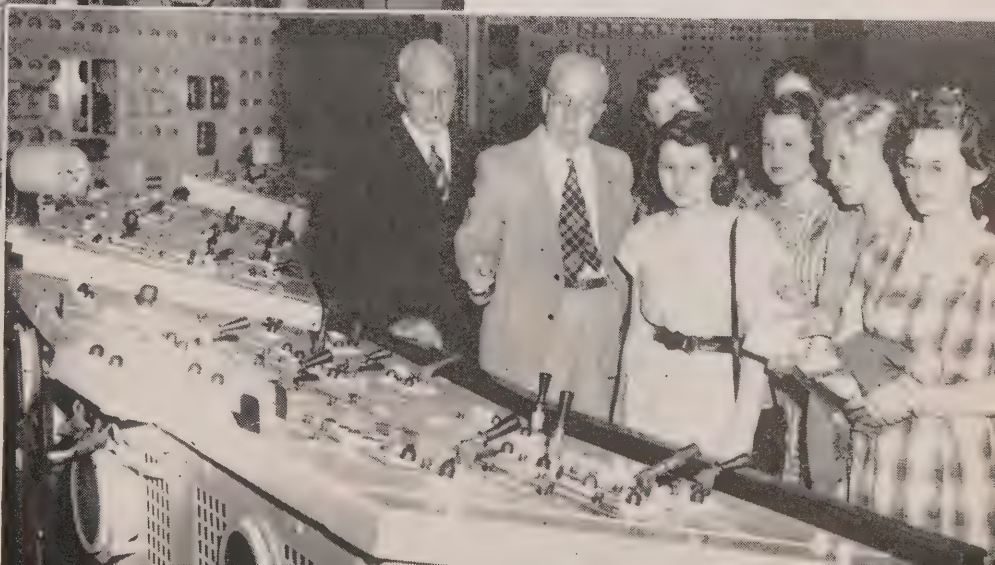
"ONE MAN'S family!" Well hardly, but the guide seems to have the wholehearted attention of this group as he explains that there are ten of these huge generators at the Queenston-Chippawa plant and that they generate more than half a million horsepower for use in factories, homes, hospitals, on farms and for many other purposes.

LOOKING DOWN from the gallery at one of the service generators, the students learn that the generation of hydro-electric power involves using falling water to spin the shaft; that the greater the fall means more driving force to spin the shaft and that a greater quantity of water makes it possible to spin a greater number of shafts or larger turbines to produce more electricity.



THE YOUNG visitors look at a Johnson valve while it is explained to them that the operation of the valve is very simple, no outside power being required. This valve, they are told, is opened or closed by means of the penstock pressure.

ONE OF the highlights of the tour was the control room which occasioned many "ohs" and "ahs." Here O. S. Luney, assistant superintendent, Niagara Falls, explains some "knish" points, while L. W. Maybon, first generator at Queenston-Chippawa, listens in. The girls liked the pretty coloured lights on the control panels which reach round one side of the room in a semi-horseshoe.



MANY MEN WIN THEIR SPURS AT HYDRO LINEMEN'S SCHOOL

Designed to speed up training and to provide a more thorough and systematic grounding in the theory and practice of line work, the Linemen's Training School is playing an important part in Hydro programmes for the extension and improvement of electrical services throughout Ontario.

Located on the Commission's property off the Royal York Road in Etobicoke township just west of Toronto, the school was opened in October, 1945. Since then 240 trainees have completed their courses, and most of them have been assigned to regular line crews by the Commission or by the affiliated public utilities in Hydro municipalities. In addition to the instruction given beginners, the school provides a special course for Hydro line foremen, while two weeks of practical

tuition and experience at Etobicoke is included in the curriculum of all junior engineers in training with the Commission.

A Vocation With Prospects

It is pointed out that line work offers good opportunities of steady advancement and promotion to returned service men who have become accustomed to an outdoor life and who are mechanically inclined and physically fit. However, before candidates are approved for the Linemen's School it is required that they spend a few months in the field with a line crew working either in the Commission's rural operating areas or in some Hydro municipality. In this way, a fair idea can be formed of their natural aptitude for the work so that neither their

own nor the Commission's time will be wasted.

Classes at the Linemen's Training School last about fifteen weeks. The training is divided into three stages, which might be described as lower, middle and upper school. Trainees in the lower and middle school take all their training on the premises. Those who have advanced to the upper school are sent out under supervision to complete their training by carrying out line construction or rehabilitation work. Thus, even before they have completed their course, trainees are engaged in work of definite value to Hydro consumers.

It is of interest to note that, up to June 15 of this year, Hydro "upper school" trainees had erected the cross-

(Continued on page 10)



IN THIS room in Hydro's "schoolhouse" at Etobicoke the staff checks reports on the progress made by trainees and compiles statistics for the Commission. Sitting at the back are J. H. Coe (left), personnel assistant, and K. W. MacDermott, job training engineer. At the front are Miss K. W. McArthur, stenographer, and L. Gagnon, draftsman.



THESE HYDRO linemen trainees are a determined-looking lot of young men. They take their work seriously, much to the delight of their instructors who are one hundred per cent enthusiastic about them. "We're not just a bunch of irresponsible kids who have never seen anything and don't know what it's all about," was the way one of these trainees put it. "We want to get on with some sound construction job that will help bring this crazy old world back again to a place that's worth living in." In the back row, left to right, are C. T. Smith, W. T. Wise, J. H. Hudson, M. N. Fish, N. M. Porteous, J. A. Irwin, P. E. Jones, R. Noble, W. E. Markham and W. G. Coulson. In the centre are H. E. Rogers, W. S. Stewardson, E. H. Brown, D. H. Hogle, W. E. Jackson, P. W. Lumley, G. T. King, J. R. Forse, R. A. Gordon and H. E. Flack. At the front are L. G. Hoyle, E. Sutton, G. S. Knapp, R. P. McConnell, A. Campbell, M. C. Willick and F. P. Duchene.



FACES OF instructors and staff reflect the pride they take in their linemen trainees, some of whom have already shown their mettle working "on loan" to seasoned crews during critical periods of storm in southwestern Ontario. Back row, left to right, K. W. MacDermott, job training engineer; E. M. Smith, A. W. Hollingshead, F. A. Tate, J. L. Duffy, H. W. Green and R. Sharman. Front row, L. B. Gagnon, J. H. Coe, J. T. McAuley, Miss K. W. McArthur, W. A. Pay, C. A. Haight, A. M. Davidson and G. A. Curry.

HYDRO TO BUILD NEW PLANT AT CHENAUX SITE



THIS PHOTOGRAPH was taken in close proximity to the Chenaux site on the Ottawa river where The Hydro-Electric Power Commission of Ontario will proceed immediately with the construction of a new 160,000-horsepower plant at a cost of \$20,000,000. This announcement is the sequel to the earlier announcement on February 10 by Premier Drew that an agreement had been reached with Premier Duplessis of Quebec for the joint development by the two provinces of new power sites at Chenaux and Cave Rapids on the Ottawa river.

MEN WIN THEIR SPURS

(Continued from page 8)

arms and guys and strung conductors for 150 miles of line. They had pruned or removed 1,800 trees which had become a hazard to Hydro circuits. They had erected 135 transformers. And they had installed 185 new services.

At the time of the tornado and floods in the Windsor area last summer, linemen trainees in the more advanced stage of instruction were sent out to help repair the damage caused to Hydro lines. It is on record that not until a week later did the regular linemen discover that a group of the Commission's "school-boys" had been working side by side with them.

Accommodations at Etobicoke include the school building—whose large floor area enables it to be used for practical training during inclement weather as well as for study classes—living quarters for the trainees, a staff residence, a recreation building and a cook-house and

dining-hall. The grounds are sufficiently extensive to permit all groups to carry on with practical training simultaneously.

Trainees at the Hydro school put in a 48-hour week. They are divided into small classes so that each one shall receive the maximum of individual instruction. Preliminary training is centred on climbing. This is fundamental to all line work, and trainees subject to giddiness are not allowed to continue with the course. When the art of climbing poles and the methods of handling and erecting them have been mastered, trainees go on to learn about the erection of cross-arms and guys, the stringing of conductors, the erection of transformers and the installation of meters. They are also familiarized with all the fundamental practices in line repair work.

Tuition in safety methods forms an important part of training. In addition to instruction in accident prevention measures, trainees are thoroughly coached in the prone pressure method of resuscitation from electric shock and in the approved first-aid methods to be employed

in cases of accident pending the arrival of medical aid. They also learn how to use fire-fighting equipment. Inside, in the class-room, sufficient theory is taught to give the trainee an intelligent background for his work.

Along with this specialized training, informal talks are given from time to time on matters of general interest to those who form part of the great Hydro family. Stress is laid on the value of spirit of good will and helpfulness in public relations. These little talks are often accompanied or supplemented by sound films which portray the scope of the Commission's activities and show how the work of every department are dovetailed into the mosaic of a great public utility service.

The Commission has placed the Lineman's Training School under the supervision of its Personnel Department. Trainees, in addition to receiving regular pay, are lodged and boarded at the Commission's expense. At the present, there are facilities for handling about 100 trainees at one time.



"SEE US smiling just now." But sore muscles and "barked" shins bear evidence to the fact that theory is not always the same as practice as this group of young engineers in training with Hydro rest after a day's experience of climbing poles at the Commission's Linemen's Training School in Etobicoke township. Reading left to right, in the back row are T. J. Hogg, F. H. Greason, W. G. Moorehead, V. A. Harrison, J. G. Taylor, R. Urquhart, R. B. Glass, E. Martin and T. A. Findlay. Shown in the middle row are L. Crane, E. Hilbig, R. K. Pile, R. E. Johnston, R. N. Bhargava, G. Evans, T. A. McCracken and R. Hermiston. In front are G. H. Lusk, W. R. Lewis, J. H. Jackson, E. Kean, L. A. Coles and L. A. Leeyus.

ONTARIO HYDRO CLUB COMPLETING PLANS FOR "YOUR HYDRO NIGHT"

**Tickets Available This Month For
Important Event On November 5**

Plans are proceeding briskly to make "Your Hydro Night" one of the most profitable and interesting evenings any employee of the Commission has ever enjoyed.

The latest announcement from the committee in charge is that Dr. Otto Holden, the Commission's assistant general manager in charge of engineering, has accepted an invitation to preside. With R. L. Hearn, general manager and chief engineer, M. J. McHenry, director of the Consumer Service Division, and John Dibblee, manager of Personnel, all booked to address the gathering on subjects of vital interest to the Hydro family, the character of the meeting is now fully assured, and the time has come to get busy with that pen or pencil and write down on the memorandum pad: November 5, Hydro night Columbus Hall, Sherbourne street, 6 o'clock.

Tickets will be available from September 30. They will be obtainable from the following committee representatives, G. H. Taylor, transmission and distri-

bution section; I. MacLean, accounting department; H. R. Morris, station section; Miss Edithemma Muir, promotion; Miss G. Bartlett, stenographic section; H. Lyle, hydraulic department; R. K. Pile, municipal department; W. J. Greves, operating department; H. K. Hillier, promotion; A. Thompson, Strachan Avenue; D. Preston, Bloor Street Stores; E. Brunelle, construction department.

It is pointed out that accommodation can be provided for only 600 dinners and that employees would be well advised to purchase tickets as soon as possible after they go on sale. The price is only one dollar, and it is said that those who have been looking after the catering are out with this challenge in regard to the dinner arranged; "Come and sample it. Then try to get another like it anywhere in the city at anything like the price."

It is not, however, on the basis of good food, and good entertainment—there will be plenty of that, too, including a drawing for a radio set—that "Your Hydro Night" is making its principal appeal. It was explained to Hydro News that its essential aim is to foster a spirit that will help to make all Hydro employees more conscious of the importance of their jobs and also to

counteract any tendency to drawing apart in a sort of departmental isolation—a tendency certainly to be deprecated but, nevertheless, possible in such a great and many-sided organization as Hydro has grown to be.

It is emphasized that in the interests of efficiency in his or her own work and intelligent co-operation with others each employee should have some idea of the broad basis of Hydro's activities. Further, it is pointed out, all employees should have an understanding of the ways and means through which co-operation between different departments can best be achieved. Added to this is the necessity for maintaining good public relations, and, in this connection, whatever his position might be, every employee has an important part to play.

"Your Hydro Night" is designed to promote good fellowship as well as to afford an opportunity for every employee to get a better grasp of the importance of his work and to see how it fits into the general scheme of things. It is felt that in no other way could this double purpose be so well fulfilled as in a gathering around the festive board, and that those who are wise enough to apply for their tickets in time will have every reason to congratulate themselves.

HOT UNDER THE SOIL

**By Grace J. Carter,
Hydro News**

About thirty years ago a Norwegian engineer when examining a network of overloaded underground cables, noticed that the vegetation in the immediate vicinity of the cables was more luxuriant than that several feet away.

From this he concluded that the conversion of electricity into heat by means of an underground resistance would result in an effective and controllable method of plant growth. And so, the records indicate, this discovery first pointed to the possibility of electricity being utilized to promote plant growth.

Successful Experiments

Experiments conducted by this engineer proved so successful that it was not long before the idea was adopted by Sweden, Denmark, Holland, France, Germany and Great Britain.

It was not until about 1926, however, that electric soil heating was introduced on this continent. But since that time many growers in Canada and in United

States have been "turning on the heat" as a means of assisting plant growth.

It was in the early thirties when Hydro started to explore the electric soil heating field and conducted a number of experiments. Having secured first hand information as a result of these experiments, the Commission was then in a position to advise consumers who were interested in this method of soil heating.

Among other things the experiments proved that it provided the ideal temperature for the germination of vegetable and flower seeds; the growing and hardening off of seedlings preparatory to transplanting them to the fields; and the rooting of cuttings of plants and shrubs. It may also be used in cold frames for the protection of early plants against damage by frost.

Should Secure Advice

Electricity as applied to soil heating, it is pointed out, cannot be installed according to a preconceived or standardized plan because each installation must be considered in relation to local conditions and requirements. There are, however, certain fundamental principles which are

associated with electric soil heating in general.

Usually it is considered a good idea to locate hot beds or cold frames where they will have a southern exposure and thus derive the maximum benefit of light and heat from the sun. Protection from cold winds by means of wind breaks is also desirable, and good surface and under-drainage are essential.

Having selected the location, the next thing is to dig a shallow pit somewhat longer and wider than the proposed bed. If it is necessary to provide underdrainage, this may be done by making a trench down the centre of the pit, or along each side, with bottom of the bed sloped towards the trench which is usually filled with crushed gravel or stone.

Banked With Earth

The next thing is to place the frame in the pit, making sure that all the joints of the frame are tight to prevent wind blowing into the bed. The sides of the frame should then be banked to the top with earth or other suitable material which should extend outwards two or three feet to prevent loss of heat. Of



THIS IS an interior view of a low-set greenhouse showing an electric soil heating installation with cables and controls on the benches. One of the main advantages of this type of soil heating is that the soil temperature can be maintained and automatically controlled.



A FINE crop of celery with the underground cable directly under the flats or benches. Note the sash has been removed so that the plants may be hardened off before being transplanted to the field.

mitted to freeze solidly, several days of combined electric heat and sunshine may be required to warm the soil sufficiently to the point where plants or seed may be grown. It must be remembered, however, that bright sunlight will cause the temperature to rise to high limits unless the hotbed is carefully ventilated by manual adjustment of the sash. It is a good idea to insert a thermometer adjacent to the thermostat in order that the hotbed may be maintained within desired limits of temperature. Hotbeds may also be controlled manually by switching the heat on and off as required. This, however, is not considered as economical and does not maintain ideal conditions for plant growth.

No Special Wiring Required

No special wiring is required for electric hotbeds and, generally speaking, they may be operated from an existing domestic or farm service. Large commercial installations, however, may need increased capacity. Since electric hotbeds are installed outdoors, it is necessary to have a suitable branch circuit from the service entrance to the location of the hotbed. This circuit may be overhead wiring from the house to the bed, or if the distance is short, lead cable may be used.

At Most Convenient Location

The point of entry for the cable is at the most convenient location, preferably at one end or on the high side where the thermostat is usually located. The soil heating cables generally terminate in a junction box, adjacent to the thermostat, and it is filled with a compound that assures the ends of the cable being moisture-proof. The arrangement of the cable is very flexible and depends upon the size of the area to be heated.

There is no special technique to the planting of seeds as they may be planted directly in the soil of the hotbed or planted in flats, which look like shallow boxes, and are set directly on top of the cables in the hotbed. The method used depends largely on the type of plant being

course, the sash should fit closely and be free from broken glass. After placing the frame, one or two inches of sand or soil are put in the bed and levelled and on this foundation the soil heating cable is laid, either in loops or in straight lines, depending upon the size of the bed. Generally speaking, smaller beds have a more uniform distribution of heat with the cable looped; while in the longer beds the cable may be laid in straight lines, lengthwise.

Two Types Of Cable

Now a word about the cable itself. In Ontario there are two types from which to choose. One is insulated with asbestos and varnished cambric, and the other with oil impregnated paper. Both types have the same electrical characteristics,

that is a 60-foot length is used on 110 to 115 volt circuits, and the 120-foot length is used on 220 volt circuits. The 60-foot length cable has a heating capacity of 400 watts, while the 120-foot length has 800 watts. For the germinating of seeds, 100 watts per square yard is recommended. This requires 60 feet of cable for a bed containing two standard sashes or four square yards, while the 120 foot length would provide the same degree of heating in a four-sash bed or eight square yards.

Minimum Temperature

One of the main advantages of sub-soil heating is that a minimum temperature can be maintained and controlled automatically by the use of a thermostat. If, for instance, the ground has been per-



THIS SHOT gives an excellent view of an empty hotbed with ground cable laid in straight lines. The cabbages which were raised from seedlings in this bed have just been transplanted to the field.

AN OVER-ALL shot of M. M. Robinson's electric soil heating installation in the Burlington rural operating area. Mr. Robinson has been using this type of soil heating for the past fifteen years.

grown and the subsequent handling, such as thinning and replanting. Experience has proved, however, that any vegetable or flower which will germinate and grow under the conditions maintained in hotbeds, can be successfully grown to the point where they may be transplanted into permanent locations.

One thing that must be remembered is that electrically heated hotbeds usually require more water than manure beds, as the soil must be kept moist, but not wet, down to the cables. This facilitates the flow of heat. Soil temperatures range from 45 to 80 degrees, depending upon the type of plant being grown and prevailing weather conditions.

The energy consumed by electric hotbeds varies considerably depending upon the prevailing temperature, the amount of sunlight and the construction of the hotbed. Reasonably well constructed hotbeds can be expected to have a kilowatt-hour consumption of from 1 to 1½ kilowatt-hours per square yard per day during the month of March, and will range from these figures down to lesser consumptions as the spring season advances.

Satisfied Customers

Hydro News recently saw two electric soil heating installations in the Burlington rural operating area. And on speaking to the respective owners it was found that both had been operating for the past fifteen years and were "more than satisfied customers." To quote one of these consumers, M. M. Robinson, who is manager of the Ontario Food Council, and secretary-treasurer of the Ontario Fruit and Vegetable Growers Associations: "I have found electric soil heating very flexible and satisfactory in every way and can't figure out why more people don't use it."

Starts Season Around February 1

Mr. Robinson told Hydro News that he usually started the season, around February 1, by planting lettuce; about the first week in March he put in cabbage and tomatoes, and a little later, melons



and cucumbers. He pointed out that by using double bunks, two or three crops to each bed were feasible and in this way it was possible to have quite a large output in a comparatively small space. He went on to say that each crop was transplanted at intervals and as the plants grew they were, of course, set further apart. As the season progressed and the weather became warmer, the sash was removed and the plants were eventually transplanted to the field, which in his particular case covered about twenty-two acres. As Mr. Robinson is in the market garden business, it can readily be seen that it is a decided advantage to get his vegetables off to a good start so that his produce will be among the first on the

market.

Another installation visited by Hydro News was that of Ross Peart who, it was learned, specialized in propagating seedlings which in turn supplied about 500,000 plants annually for the farms around the district, as well as for his own market garden of some twenty acres. Mr. Peart said that he used cable as supplementary heating around the sides of the benches, and stressed the fact that the soil must be kept moist. He rather shyly admitted that he had been able to produce some worthwhile strains in various plants, particularly steak tomatoes.

These facts indicate old sol will have to look to his laurels.

ROSS PEART (foreground) who specializes in propagating seedlings, is shown looking over a crop of celery. Mr. Peart uses electric soil heating cables as supplementary heating around the sides of the benches.





Hydro

HOME FORUM

by Edithemma Muir

HOME ECONOMIST

Summer vacation for this year, is just about over. After the expense of our holiday has been realized, we turn to more economical living—especially the food budget. Fortunately the autumn markets offer many opportunities to save and still supply the family with dishes that tempt, fill and satisfy. So in this particular article we shall talk about economical practices.

* * *

Stuffed cucumbers Cut large cucumbers in half lengthwise, remove seeds and soft portion with spoon. Cook in salted water for 5 minutes. Drain and stuff with meat loaf mixture. Bake in electric oven of 400 degrees for 30 minutes.

* * *

Eggplant patties: Slice, peel and dice eggplant in small pieces. Cook in slightly salted boiling water until tender. Drain and mash. Mix in $\frac{1}{2}$ cup chopped onion, 1 beaten egg, $\frac{1}{4}$ cup flour, $\frac{1}{2}$ tsp. sage and $\frac{1}{4}$ tsp. savoury. Heat $\frac{1}{4}$ cup bacon dripping in frying pan and drop eggplant mixture in by spoonfuls. Brown on each side; serve with bacon.

* * *

A teaspoon of chili sauce over a poached egg lifts it from an ordinary breakfast dish to an extraordinary one for lunch or supper.

* * *

Vinegar may be used as a substitute for lemon juice in cooking, especially in fruit pies such as huckleberry, elderberry and mince.

* * *

As a cleaning aid wash the top of the electric range with a cloth dampened with vinegar. Your stove will really shine when it is wiped dry.

* * *

It only takes a pint of hot fruit juice which you may have left over from canning fruit today) poured over softened gelatine to make an economical jelly mould. Use one tablespoon gelatine soaked in one-quarter cup cold water.

RED CABBAGE AND BEETS

- 1 red cabbage
- 2 cups chopped beets (cooked)
- 3 tbsps. butter
- 2 tbsps. vinegar
- $\frac{1}{4}$ tsp. pepper
- $\frac{1}{2}$ tsp. salt
- 1 tbsp. onion.
- 2 chopped cooked eggs

Soak cabbage for 10 mins. in salted water. Chop coarsely and cook. Add remaining ingredients. Heat in double boiler and serve.

GREEN TOMATO PIE

- Pie paste
- 3 green tomatoes
- 3 tart apples
- 1 cup raisins
- 1 cup brown sugar
- $\frac{1}{4}$ tsp. salt
- $\frac{1}{3}$ tsp. cinnamon
- $\frac{1}{4}$ tsp. cloves
- 2 tbsps. vinegar
- $\frac{3}{4}$ cup cornflakes

Line pie plate with pastry. Combine tomatoes (chopped, unpeeled), apples (peeled, cored and chopped), raisins, sugar, spices and vinegar. Bring to boil, stirring frequently. Cook 20 minutes. Cool, add cornflakes and put into pastry. Cover with top pie crust and bake in electric oven at 400 degrees for 10 mins. and at 350 for 25 mins.

Pickles tend to soften in weak brine. The recommended solution to crisp cucumbers is one pound of salt to five quarts of water.

* * *

There's a big difference in dill pickles. We tried to get the recipe from a restaurant down the street. No luck. . . . We quote an engineer who says the brine should be steaming hot.

Make a brine of $\frac{1}{2}$ cup plain salt (not iodized) to 7 cups boiling water. Arrange layers of dill-size cucumbers with sprigs of dill and a few mixed spices in jars; cover with brine. Seal and let stand in a cool, dark place for two months before using.

You were asking about the jar which you bought containing sweet pickles? Yes, it's all right to use for canning, even though there is no glass lid. When the processed jar begins to cool, you will hear an "ugh" sound and see a dent in the centre of the lid. That means the seal is tight.

* * *

Just in case the fresh fruit pie boils over, moisten a strip of cheesecloth and lay around the pastry edge to soak up bubbling juice. It is also wise to lower the temperature to 350 degrees, ten minutes after pastry has been put in the oven at the usual temperature of 450 degrees.

* * *

When you are having dinner alone after office hours—it's easy and sometimes proves harmful to forget the wise old rule that eating enough does not mean eating all you want of any one kind of food. The daily groups of foods are milk, meat, vegetables, fruit and whole-grain cereals.

* * *

"Step to safety—watch your step." That's a motto for you in your daily life as well as the children on the way to school. A safe ladder or step stool is the only thing to use for climbing. Folks who stack a pile of books on a chair and use that as a make-shift ladder, deserve little sympathy when they get in difficulty.

* * *

Cookies baked with a small amount of fat in recipe may stick to bottom of pan. With this in mind, arrange cookies on wax paper placed on cookie sheet. As soon as one batch of cookies has finished baking, remove from oven, paper and all, and slide on the next batch. This saves time and you do not need to grease cookie sheet.

Instead of dropping cookie mixture in pan, spread the dough one inch thick in pan, bake and cut in squares.

NEWSMEN SEE ACTION

TAKEN ON a tour of the new Hydro power developments now being carried out at various sites in the province, a party of some twenty representative Ontario newspapermen and magazine editors were given an opportunity of viewing construction activities at close hand. They saw how the Commission's construction programme is going ahead in spite of material shortages and they received an impression, which could be obtained in no other way, of the extent and magnitude of the Commission's tasks. It was an opportunity for the Commission as well as for the newsmen, since the co-operation of the public through a well-informed press is a tremendous "lift" in the successful carrying out of undertakings upon which the material welfare and progress of the province so largely depend.



DR. OTTO HOLDEN, Assistant General Manager of the Commission in charge of engineering, is explaining to Allen M. (left) how lands adjacent to the Ottawa river are to be cleared and flooded in order to provide adequate water storage and a suitable head for a major power development at Des Joachims.



HYDRO CONSTRUCTION camps have an enviable reputation. The one shown above, and only partly completed, is at Des Joachims on the Ottawa river where the Commission is carrying out its chief major power development. It will be a long-term job and, as usual, particular attention is being paid to the comfort of the men. In addition to commodious living quarters, planned on the most modern lines, and dining and recreation halls, there will be a fully-equipped hospital with a resident doctor and registered nurses.



HYDRO NEWS had some difficulty in getting the Commission to authorize a picture taken at the site (left). The men are all right, and this is the "cook" door. But the building is not a bit like the permanent dining-hall now completed at Des Joachims. It was just a temporary structure used as a makeshift until carpenters could get to work on the real thing. However, visiting newspapermen were unanimous in their approval of what was served inside.



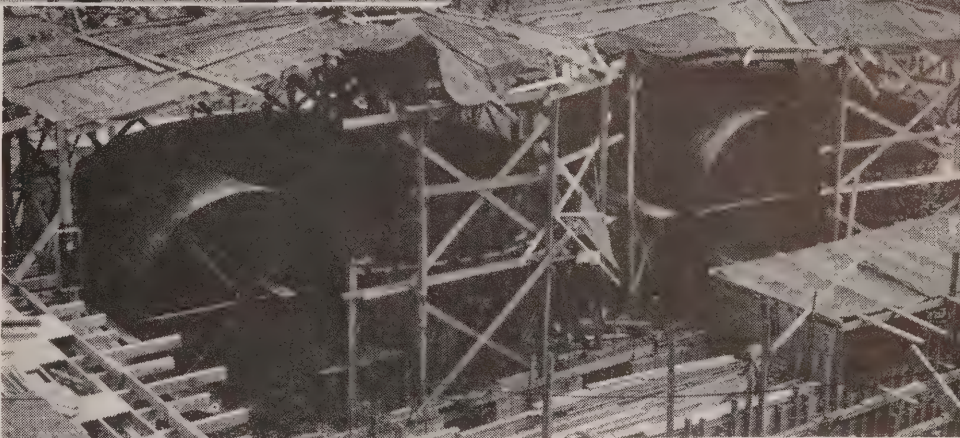
NERVE CENTRE of Hydro's transformer at Burlington is the control room. A group of newsmen attentively follow the demonstration of A. E. Chatland, one of the operators in the station, as he shows how every piece of equipment and machinery in the place can be controlled by the bench board or operating panel. Into Burlington comes power at 220,000 volts and it is "stepped down" to 110,000 volts.

LONG HYDRO FRONTS

LOOKING DOWN from the concrete mixing plant, a group of newspapermen (right) view construction activities on the main dam at Stewartville. Leaning on the rail is F. S. Gilbertson, and on his left are Allen Kent, Rowland Jerry, Douglas Vaisey, H. M. Tedman, Ted Sanderson and Ken MacTaggart. The dam spans the Madawaska river. It is 900 feet long and, when completed, will rise to a maximum height of 200 feet above its rock formations. Building of the dam and other structures calls for 275,000 cubic yards of concrete.



AS MIGHT be expected from the brisk pace they are setting this party (left) is headed for the dining-hall where skilled Hydro cooks are preparing a bounteous repast. Travelling along the smooth road carved out of the forest at Stewartville are Allen Kent (left), F. S. Gilbertson, Ken MacTaggart, Douglas Vaisey and Art Frampton, Director of Engineering for the Commission.



SHOWING A group of newsmen (left) where the dams will be built at Des Joachims is Angus Richardson, Hydro's superintendent on the development. The Ottawa river, he explains, will be flooded back as far as Mattawa, a distance of some 60 miles, and the dams will control the great storage reservoir thus provided. The main dam, he points out, will be 2,500 feet in length, spanning three channels of the river. A side dam, 1,200 feet long, will be built to block off a 'run-around' of the river on the north.



WHAT YOU see is not some half-concealed juggernaut car or a take-off point for jet-propelled rockets. You are actually looking at two scroll cases around which the forms for the concrete housing are being built up. These scroll cases will be an integral part of the power house. Through them the water coming down from the penstocks will be distributed in a swirling motion to the turbines.

MIDLAND

**By Grace J. Carter,
Hydro News**

It's been a long, long time since Samuel de Champlain, the French explorer, first looked over the real estate situation in the Georgian Bay area. Records indicate that Monsieur de Champlain was the first white man to visit that territory and that he arrived on the scene early in the year 1615.

If he could return today and see this area known as Midland where the benefits of low-cost Hydro power are now available to a population of 7,000, he would probably stroke his beard and mutter "Sacre bleu!"

Interesting Facts

And speaking about Hydro at this modern mecca of summer tourists, if the early French tourists were to drop in at the office of Roy S. King, the genial

and versatile manager and secretary-treasurer of the local commission, he would learn a number of interesting facts associated with Midland's progressive growth.

For instance, on May 2, 1911, the town entered into a contract with the Commission and the initial load was 200 horsepower. Today, the load totals 5,000 horsepower and there are 1,773 domestic, 225 commercial and 59 industrial users of Hydro power.

First Commission

While Monsieur de Champlain probably knew that the first white men to settle in the district were the French Jesuit missionary priests, who, in 1639, erected a mission house called Fort Ste. Marie, he may not have been posted on the identity of the members of the first Hydro Commission at Midland. Mr. King would tell him that they were: Wil-

liam T. Dudley, chairman; A. H. Fowley and Mayor Digby Horrell.

Having given Monsieur de Champlain this information it is unlikely that the enterprising Mr. King would miss the opportunity of discussing rates.

"And, mon cher monsieur," he would probably remark, "do you know that before the time of Hydro in Midland, electricity was costing the people nine cents per kilowatt hour?"

Coup De Grâce

After the distinguished explorer had pondered the significance of that statement, the local Hydro doyen would probably follow up with: "In 1913, with an average domestic monthly consumption of 16 kilowatt-hours, the average cost was 6.9 cents per kilowatt-hour."

Mr. King's coup de grâce, however, would come with the proud observation that today the average monthly domestic consumption is 157 kilowatt-hours and

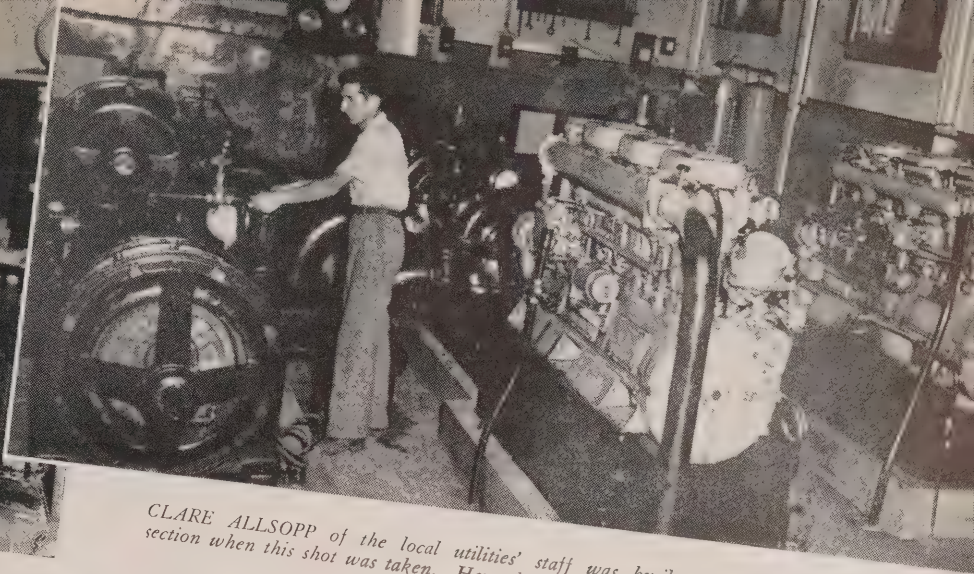
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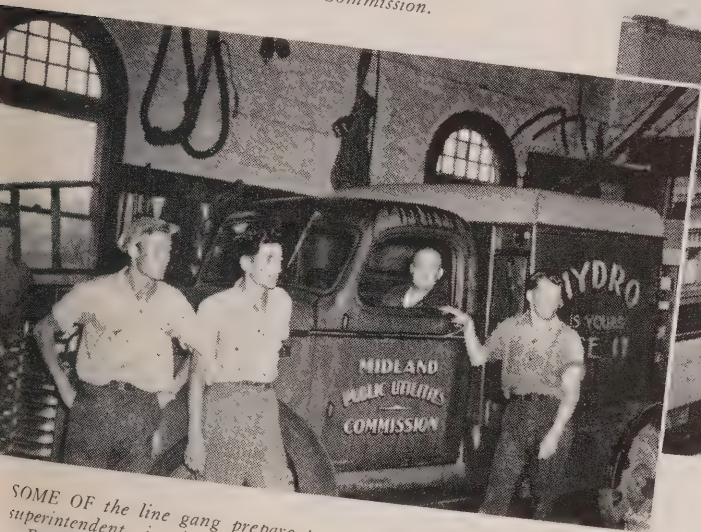
THE TOP view shows a very small section of Midland's popular Little Lake tourist camp which has eighty-five cabins, as well as space for tents and trailers. The lower scene shows a stretch of the excellent sandy beach where so many thousands of tourists "find their place in the sun."



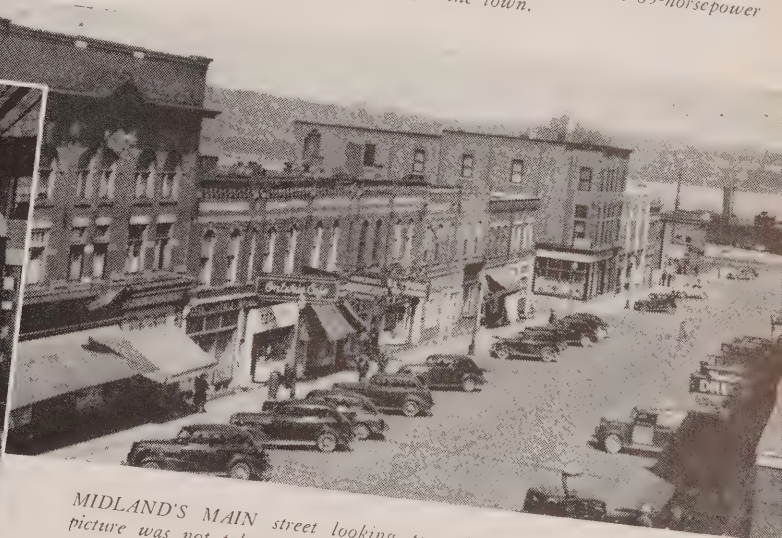
STELLA SHARP smilingly shows a customer an electric iron in the display room of the Midland Public Utilities Commission.



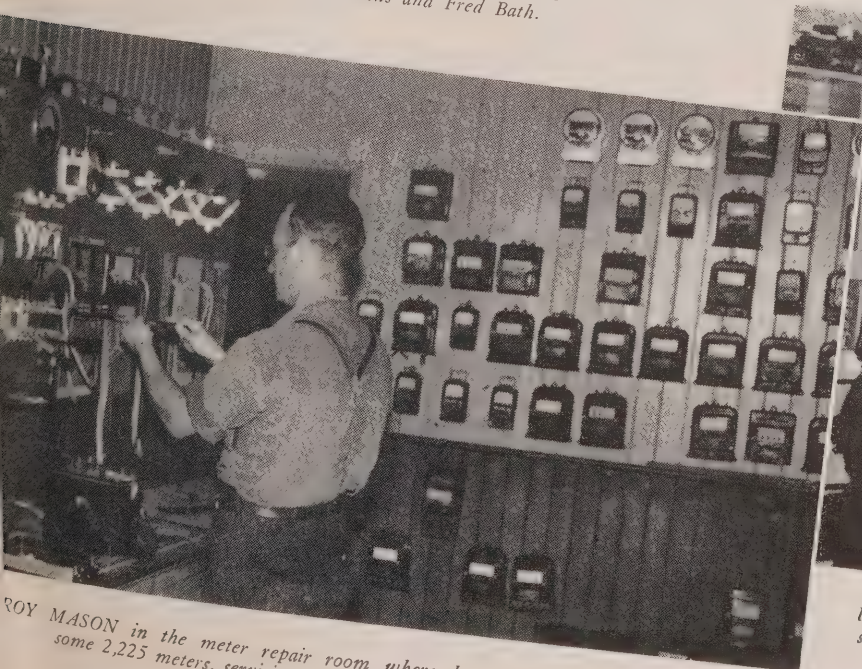
CLARE ALLSOPP of the local utilities' staff was busily engaged in the waterworks' section when this shot was taken. Here they have a 200-horsepower and an 85-horsepower motor to pump the water for the town.



SOME OF the line gang prepare to go on a job. Frank Yon, superintendent, is sitting inside the truck, and outside are Frank Holmes, Tom Grigg, Eddie Collins and Fred Bath.



MIDLAND'S MAIN street looking towards the harbour. Obviously this picture was not taken on a Saturday afternoon, as then the streets would be lined with people bustling in and out of stores.



ROY MASON in the meter repair room where he inspects some 2,225 meters, servicing about 450 each year.



FRANK HOLMES, lineman, on the left, and Tom Grigg select material for the day's work from the well-kept local stockroom.

MIDLAND

(Continued from page 18)

the average net cost per kilowatt-hour is 1.26 cents. Furthermore, while going through the records, he would not fail to mention that Midland paid off its final debenture payment on September 30, 1938; that there are fifteen on the staff and that the present very able members of the local commission are: Gordon C. Norris, chairman; David Hurrie, James Mackie and Robert L. Musgrove, commissioners, and Mayor C. M. Vent.

There are a number of other facts which Mr. King would not overlook. For instance, Midland, which, today, has five power substations, was incorporated as a town on January 1, 1890, and in 1902 the first electric power was obtained from the Midland Electric Company which generated energy at several points on the Severn river.

History of Midland

After having enlightened Monsieur de Champlain on Hydro's contribution to the progress of Midland, Mr. King would no doubt be willing to bring him up to date on the history of the place.

While the globe-trotting Frenchman may have known about the Jesuit priests settling in the district and the fact that the Huron Indians were natives of the vicinity, he may not have been fully advised concerning the irate Iroquois Indians who made things so embarrassing that both the Hurons and the priests decided that a scorched policy be applied so far as Fort Ste. Marie was concerned before withdrawing from the district.

Permanent Settlement

It was almost 200 years later, around 1835, that a second and permanent settlement was started. This time it was the English who settled on the present town-site then known as Munday's Bay, which received its name from two landowners, Israel and Asher Munday, who lived in the vicinity. In 1879 the community was incorporated as a village and the present name was selected because it was about halfway between Penetanguishene and Victoria Harbour, the two principal places on Georgian Bay at that time.

It would undoubtedly give Mr. King considerable pleasure to be able to show Monsieur de Champlain the many fine homes, gardens, public buildings, schools, churches and library which today stand on ground which was, in 1615, forest primeval. Lumbering, as an industry, the Hydro secretary-treasurer would explain, had died out when the forests had been cleared.

Amassed A Fortune

He would recall in passing, that a prominent family who lived in the district later amassed a fortune in the lumber and shipping business on the United States Pacific coast. Monsieur de Champlain would probably chuckle when Mr. King mentioned the fact that the name of that family was Dollar.

There is one spot in Midland which Mr. King would not fail to mention to any visitor—if it requires any mentioning at all: that is the very famous and popular tourist resort which is operated by the town and which, every year attracts hundreds of visitors from all parts of the United States and Canada. Known as the Midland Tourist Camp, it is located at Little Lake Park. Its outstanding accommodation, swimming, fishing, boating and other facilities, too numerous to mention, bring old and young alike back year after year.

Gateway To 30,000 Islands

Known as the gateway to the famous 30,000 islands of Georgian Bay, Midland is the focal shopping centre for thousands of Canadian and American tourists and summer residents. When a stranger visits this town, particularly on a Saturday during the summer months, his first thought is, where's the carnival, or maybe there's going to be a parade! Otherwise why would there be so many cars and so many people walking up and down the main streets, bustling in and out of the stores? But if he stays long enough he soon realizes that there is no special celebration going on but that it is just another routine day in the town's busy life.

If Mr. King were entertaining Monsieur de Champlain, he would also like to show him Midland's waterfront and possibly visit the Midland Shipyards Limited which, during the war, produced corvettes, minesweepers and tugs. Their peace time activities cover quite a large export trade, and at the time of Hydro News' recent visit they were in the process of building utility barges for France. One of the accomplishments of this company, of which it is particularly proud, is that it built the S.S. LeMoyne, which for many years had the distinction of being the largest Canadian vessel on the Great Lakes.

Impressive Elevators

There is no doubt that Monsieur de Champlain would be impressed if he could see the four grain elevators which are operated by the Midland Simcoe Elevator; Midland Elevator Company Limited, Aberdeen Elevator Company Limited and Tiffen Elevator. And in the evening, just at dusk, these elevators sil-

LONG HYDRO RECORD

Commissioner ROBERT LOUIS MUSGROVE has a long Hydro record, having been a member of the local commission since 1949, and previous to that, from 1901 to 1937 was superintendent of the Midland Public Utilities Commission.

He was born in 1870 at Stayner, and received his education at Hillsdale, Ontario. Although retired from active business he is keenly interested in club organizations and likes to watch lacrosse and hockey.

houetted against the sky, with their tall shadows shimmering across the Bay, lend a certain ethereal beauty to the landscape that would impress any visitor.

Then there is the Century Coal Company Limited which brings its coal in by water and ships it out by rail.

As might be expected, many of the freighters, as well as other vessels, have their repairs and replacements made at Midland. Several pleasure cruisers from Buffalo, Detroit and Chicago make this a weekly port of call.

With its many advantageous facilities, this enterprising community in Simcoe county has a variety of industries which include: Copeland Flour Mills Limited; Midland Boatworks; Fine Silks Limited; Glen Mawr Frocks Limited; Beaver Lumber Company; Midland Wood Products; Midland Foundry and Machine Company; J. B. Roebuck Limited (tents and awnings); Great Lakes Boat and Machine Company, and many others.

Another point of interest—one that is on the itinerary of most tourists to Midland—is the Martyrs' Shrine, picturesquely located on a hilltop overlooking the bay on the eastern outskirts of the town.

Local Newspaper

If it were possible for Sieur de Champlain to actually return to the scene of his early explorations, there is one man who would be equal to the occasion—and the shock. He is William H. (Bill) Cranston, publisher of the Free Press Herald, son of Herbert Cranston, who has just retired and who was at one time editor of The Star Weekly in Toronto.

The front page story in the Free Press Herald, chronicling the unique event would reflect all the skill, accuracy and imagination associated with the highest traditions of Canadian journalism.

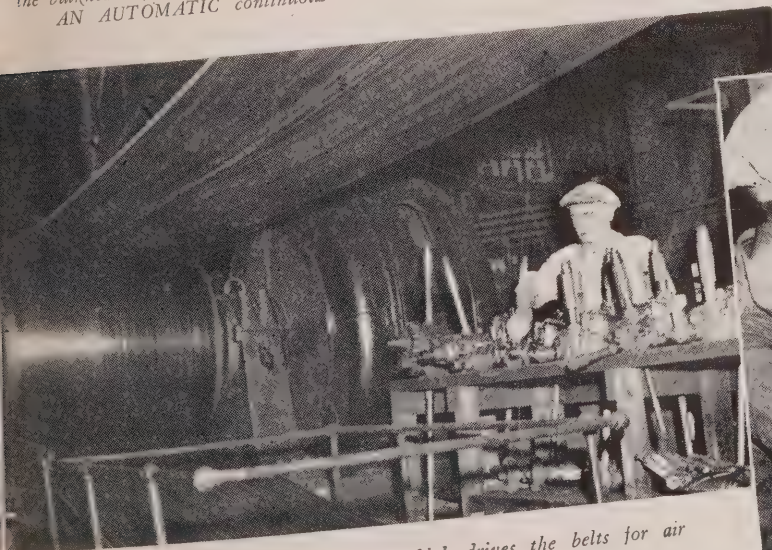
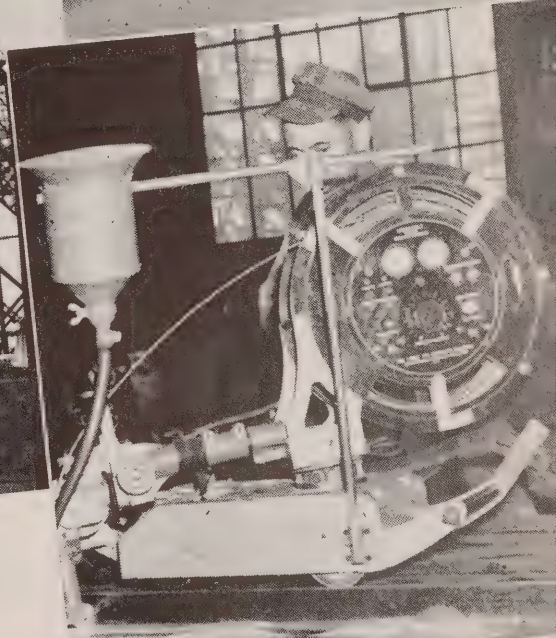
And as he read the story in amazement Monsieur de Champlain might give voice to another "Sacré bleu!"



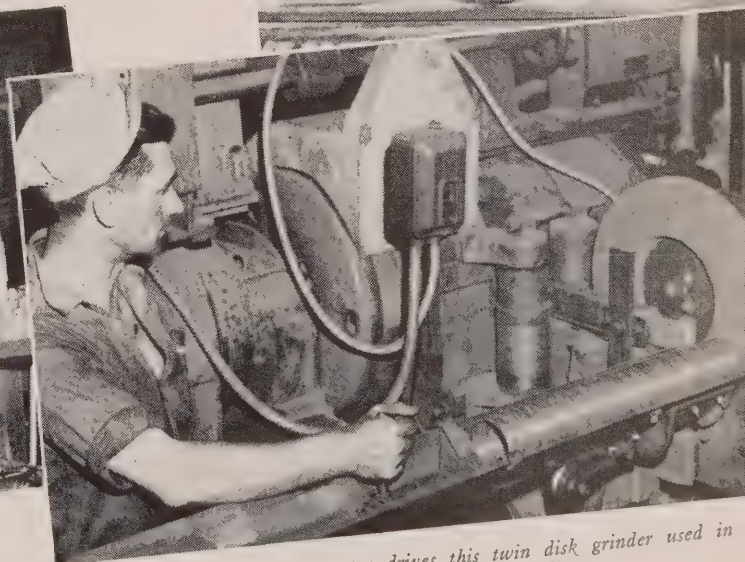
ONE OF the four grain elevators located in Midland, which is said to have the largest grain storage facilities east of the Great Lakes.
THIS IS an electric knife (right) cutting about 280 thicknesses of dress material at the one time.



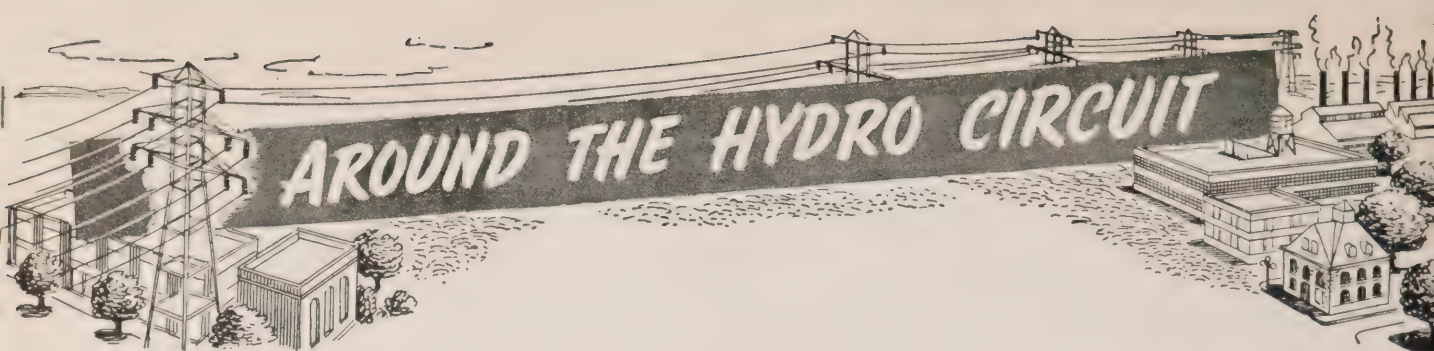
IF YOU look closely among the frame work, which is on the water's edge, you can see the bulkhead of a barge, which when completed, will be shipped to France.
AN AUTOMATIC continuous welder (right) used for welding ships' plates.



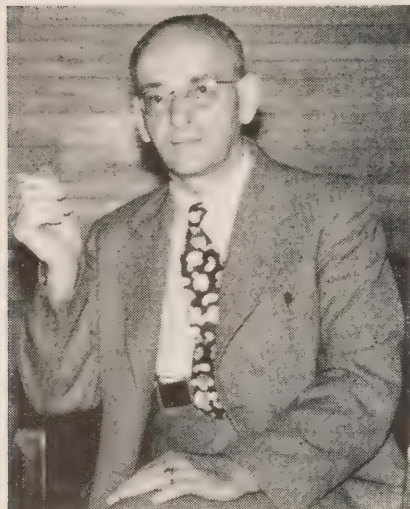
THIS IS a 450 horsepower motor which drives the belts for air compressors used in rivetting.



A 33-HORSEPOWER motor drives this twin disk grinder used in grinding 11,000 piston rings an hour.



CHAIRMAN MORRIS



GORDON CLIVE MORRIS, chairman of the Midland Public Utilities Commission, has quite an extensive Hydro background. From 1913 to 1927 he was a lineman; from 1935 to 1940, and then again since 1944 he has served as a member of the local commission. During 1928 he was a member of council.

He was born in the county of Durham, England, in 1891 and received his education in that vicinity. At the beginning of the first world war he enlisted in the infantry but was soon transferred to the Canadian engineers, and from 1915 to 1919 served overseas with both divisional field companies and signals.

Mr. Morris has a very interesting hobby—amateur radio—and says he has derived much pleasure contacting other ham operators.

MAYOR C. M. VENT

Mayor CHARLES MILTON VENT has every reason to be thoroughly familiar with Midland and its environs, having been raised in the district. Born fifty years ago in Victoria Harbour, he attended public school there and later went to the Orillia Collegiate and then to the Midland High School.

In 1936 he first entered municipal life when he became a member of council, which office he held for the following year and then from 1940 to 1944. In 1945 he became reeve and for the past

two years has been serving as mayor.

When he has any time off from his mayoralty duties and as secretary-treasurer of the Copeland Flour Mills, Mr. Vent enjoys fishing and gardening and takes a keen interest in the activities of the local Y.M.C.A.

BUSY MAN

There is no doubt about ROY S. KING, manager and secretary-treasurer of the Midland Public Utilities Commission being a busy man. Besides having been on the utilities commission for over twenty years, he has been town clerk and treasurer since 1936; secretary-treasurer of the Parks Commission; and secretary of the Board of Health. He is also at the present time secretary-treasurer of the Kiwanis Club; treasurer of the Midland Recreational Council, and secretary-treasurer of the Midland Boys Band.

Mr. King was born in Moorefield, On-



tario, and received his education in Toronto. He is married and is very proud of his daughter and three sons.

When asked if he played golf, he replied: "Why no, I'm not old enough for that, I like lacrosse and hockey."

DAVID HURRIE

DAVID HURRIE has been a member of the Midland Public Utilities Commission for over fifteen years, having served as a commissioner from 1928 to 1939, and from 1941 to date. Previous to that, from 1923 to 1926, he was an alderman in the town council.

A native of Kirriemuir, Scotland, he received his education there and later served his apprenticeship as an engineer in the shipyards at Dundee, Scotland.

MEET JAMES MACKIE



A native of Aberdeen, Scotland, JAMES MACKIE, commissioner of the Midland Public Utilities Commission, is a well-known figure in municipal affairs, having been a member of the commission since 1941, and mayor from 1937 to 1939; deputy reeve in 1933; a member of council from 1928 to 1932, and then again in 1936.

He has the distinction of having served in both world wars, and now in his leisure hours "goes in" for gardening, fishing and hunting.

After that he sailed as a marine engineer in the British Merchant Marine for eleven years with a city line of passenger steamships which plied between Glasgow, Bombay and Calcutta.

In 1911 he came to Canada and his first position was engineer in charge of a steam driven electric power plant at Barrie. This, of course, was before the advent of Hydro in that town. Since 1920 Mr. Hurrie has been electrician at one of the Midland grain elevators.

He says he used to be an ardent fisherman, but now a good deal of his spare time is taken up with Hydro affairs and reading.



DR. R.W.I. URQUHART MEDICAL DIRECTOR

POLIOMYELITIS

This is the time of year that the dread disease acute anterior poliomyelitis, or infantile paralysis commonly known as "polio" makes itself evident. Cases begin to appear with the hot weather of July and may, in some years, increase to epidemic proportions during the latter part of August and September. In October cases begin to fall off and almost disappear with the onset of cooler weather.

Caused By Virus

The disease is caused by a virus, an organism much smaller than most ordinary bacteria. It gains entrance to the body through the nose or throat or through the digestive tract. It is spread from polio-infected persons or carriers by the spraying of droplets in sneezing, coughing or even talking. It has been found in the excreta of polio infected persons or carriers, and may thus contaminate drinking water or be carried by flies and thereby be deposited on uncovered food.

The first symptoms appear in from four to ten days after infection with the polio virus has occurred. Unfortunately the early symptoms—headache, moderate fever, lassitude, upset stomach, diarrhoea, etc.—are common to most general infections. This not only makes the disease difficult to recognize, but renders suspect almost all infections in the five to fourteen age group during the polio season. Muscle pain or weakness, or neck stiffness are specific symptoms which demand immediate medical care.

Epidemics Vary

It is not known why some cases develop muscle weakness or paralysis and others make a complete recovery without any specific treatment. Epidemics vary from year to year and so far this

year the percentage of cases with muscle involvement has been relatively small.

We do know that extreme fatigue, uncleanness and chilling render an individual more susceptible to the disease. We know too that spraying of the nose does not effectively prevent infection nor does convalescent serum prevent paralysis. Neither, therefore, is recommended. In the present state of our knowledge of the disease, active treatment is limited to the care of weakened muscles so as to prevent crippling.

What then can one do to guard against the disease? It is suggested that children be kept out of crowds during the polio season. Physical fatigue, exhaustion and chilling should not be allowed to occur. The hands should be kept clean by washing before meals and after going to the toilet. Garbage and waste and human excreta should be properly looked after so as not to attract flies and insects. Fresh fruit and new vegetables should be thoroughly washed before eating. Remember that any infection during a polio epidemic is suspect and a careful watch should be kept for suspicious symptoms. If there is any doubt, call your doctor. He will do what is necessary to make a diagnosis and will give you sound advice.

BACK TO WORK

The holiday season is now almost over. The children are back at school and the majority of us are settling in for the fall and winter's work. It is a time when one tends to look ahead in order to assess what is to be accomplished in the coming months. It is also a time when one should assess one's own capabilities for the task which is ahead.

For the most part, those who have had holidays return to work refreshed and invigorated. If such is not the case, there is usually a reason, and it would be wise to try and discover it. It may be that the type of holiday one has chosen has not been suitable or that other responsibilities have decreased its benefits.

On the other hand, it may be that there are physical reasons for the situation. Unsuspected early disease or unwise living habits not infrequently account for a decrease in well-being. If there is any possibility that such might be the case, a visit should be made to the family doctor. A thorough examination may reveal the true cause of the lack of health. In any case, the doctor will be in a position to size up the situation adequately and give advice which should result in improved health.

These are the reasons behind the type of examinations which have been described as periodic health examinations. These examinations are done at regular intervals of a year or so with the object of determining the state of health of the individual. In many cases little change is detected from year to year, but occasionally a minor sign or symptom is brought out which indicates that something is going wrong. It is at this time that advice or treatment can do the most good. It is good business, therefore, to have a check up of this kind occasionally. Do not put it off too long.

COMMISSION SETTING "ALL OUT" PACE IN BIGGEST PROGRAMME IN HISTORY

Six Power Projects Now Under Construction — Objective Is 900,000 Horsepower Or Fifty Per Cent Increase In Present Generating Capacity

Nine hundred thousand horsepower!

This is Hydro's objective in the biggest programme of waterpower development ever to be undertaken at one time in Ontario. It will represent an addition of approximately 50 per cent to the Commission's present generating capacity.

Together, industrial, commercial and domestic demands for power at the present time, it is emphasized, show an increase of 25 per cent since the end of the war and indications are that this figure will, before long, reach a much higher level. To meet these demands, which are unprecedented and unexpected, and to provide the minimum reserves for future contingencies, the Commission is endeavouring to accomplish within a period of four or five years work which

normally would take nearly double the time to complete.

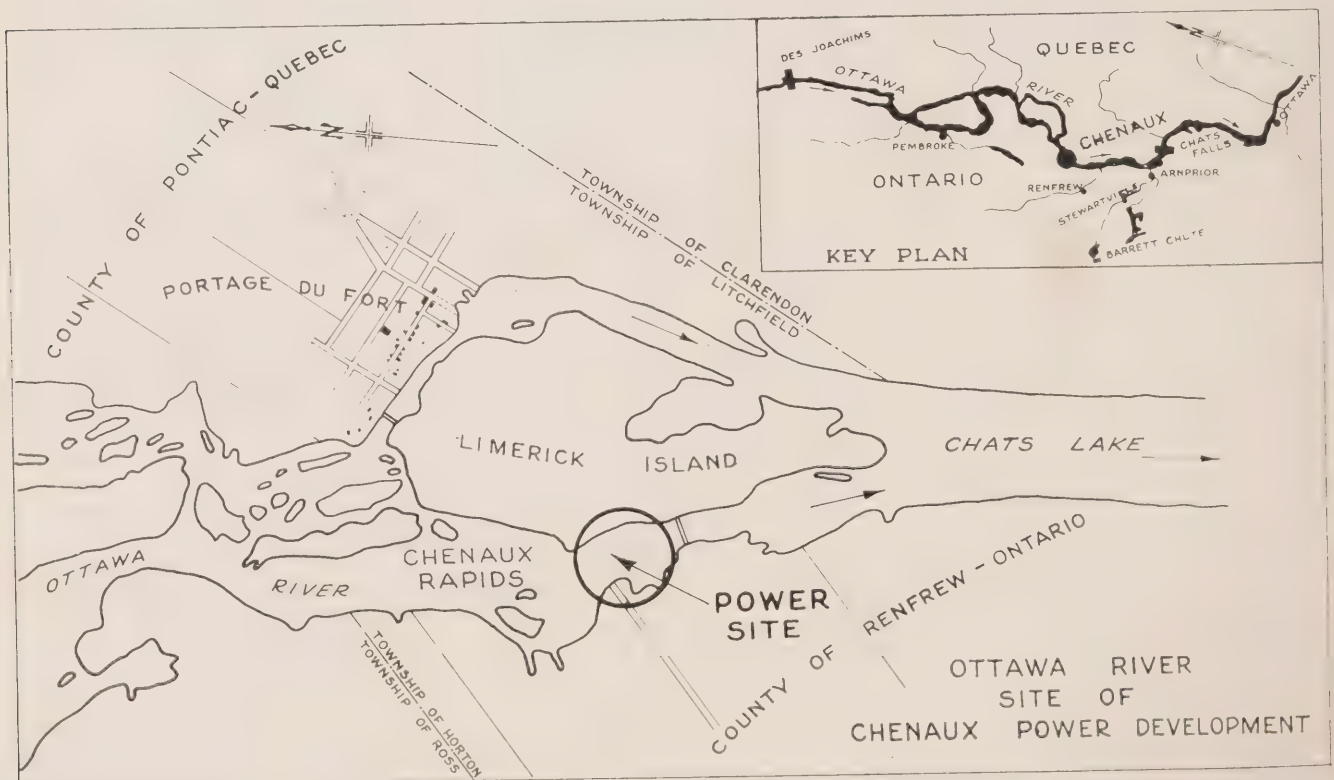
Including the Chenaux development near Renfrew on the Ottawa river, which, it is stated, the Commission will begin immediately, Hydro engineers will have six power projects on their hands—although one of them, the addition to the DeCew plant near St. Catharines, is now practically completed. There is still another project in the offing. This is known as the Cave Rapids site, and, like Chenaux and Des Joachims, is located on the Ottawa. No date, however, has yet been set for the beginning of this undertaking. When developed, it is expected to yield slightly more power than Chenaux, and should bring the new horsepower totals to well over the million mark.

Supply Southern Ontario

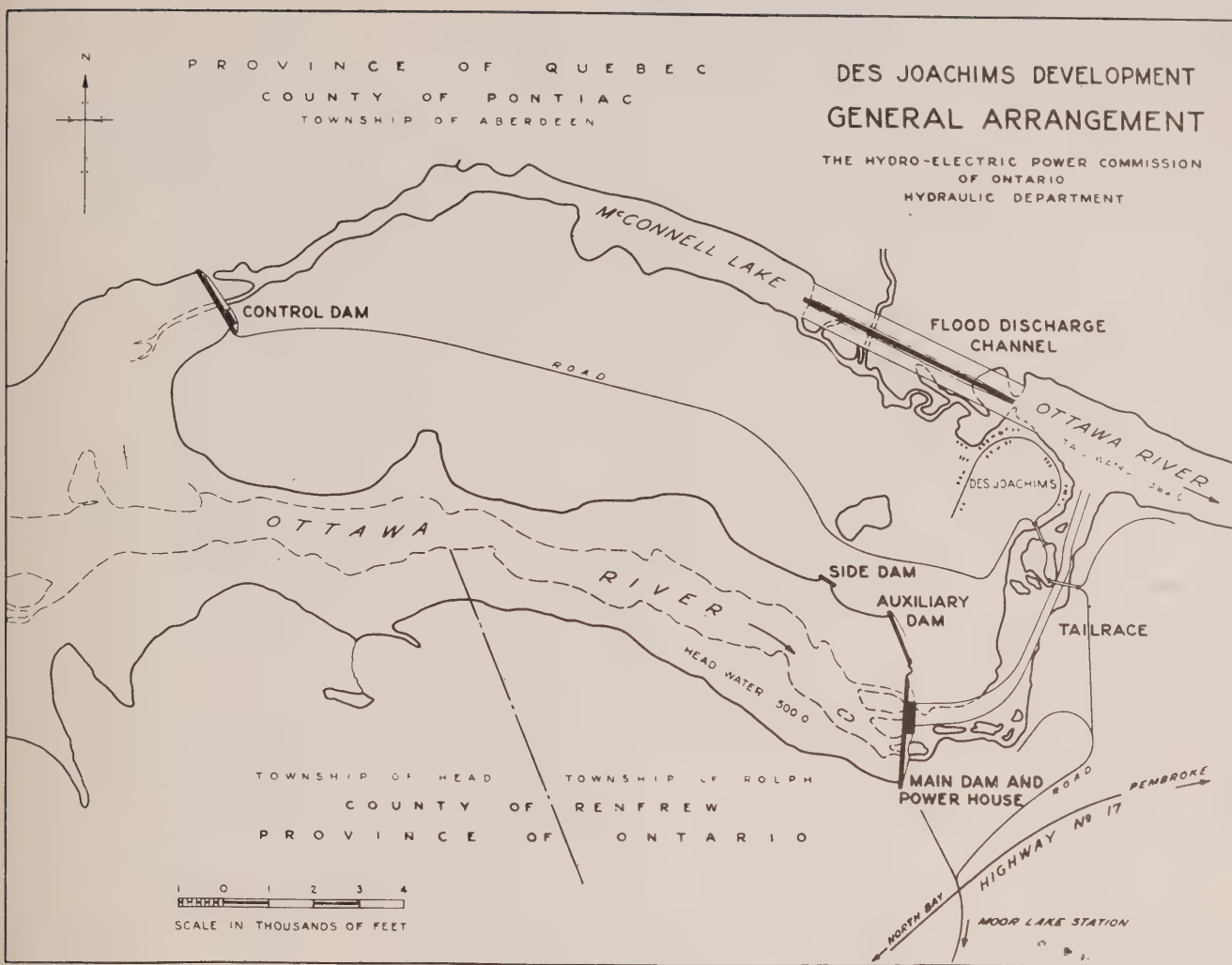
With 480,000 horsepower calculated as the ultimate capacity of Des Joachims and an expected yield of 160,000 horsepower from Chenaux, the bulk of the new power

will be obtained from the Ottawa river, and, it is understood, will be employed largely to reinforce supply in Southern Ontario whose resources will be further augmented by the development at Stewartville on the Madawaska. The plant there will have a capacity of 81,000 horsepower and plans, it is reported, have already been drawn up for further developments downstream. Stewartville will be completed considerably in advance of Des Joachims and Chenaux.

Requirements in the North are being looked after by the developments at Aguasabon in the Lake Superior country and at Tunnel Site on the Mississagi river in the Sault Ste. Marie district. The Aguasabon development, it is pointed out, will have an important bearing on the development of the pulp industry, while Tunnel Site will play an even broader role, providing additional power for mining and other industries in the Sudbury-Nipissing, Abitibi and Temiskaming districts and possibly Manitoulin island. Capacity at Aguasabon will be about 55,



LOCATION OF the Chenaux site on the Ottawa river is shown on the above plan. When completed, this new Hydro development will provide 160,000 horsepower.



THIS SKETCH shows the general layout of the Des Joachims development which is located 35 miles upstream from Pembroke on the Ottawa river. When completed and all eight generating units are in operation, this plant will have an installed capacity of 480,000 horsepower, and will be the second largest of the Commission's developments, the Queenston-Chippawa near Niagara Falls being the largest. Construction work has already started on the Des Joachims project, and it is expected that the first three units will be in operation by September, 1950.

000 horsepower; at Tunnel Site approximately 58,000 horsepower. In the North, as well as in the South, additional sites have been mapped out by the Commission for future development as the need arises.

Hand in hand with the developments being undertaken for the actual production of more power, the Commission is reported to be vigorously engaged in improving its transmission facilities. This work, it is pointed out, is of vital importance, since, as additional power becomes available, it is essential that there should be no obstruction or delay in effecting a well-organized delivery to consumer channels. In spite of material shortages, many sections of key transmission lines required to link up new power with distribution centres have already been constructed, and a frequency-changer unit is now in service at Scar-

borough near Toronto to facilitate the interchange of power between 25-cycle and 60-cycle areas. It is understood that another frequency-changer unit will be set up shortly at Sudbury to handle new power for the northern districts of the province originating at Hydro's new development on the Mississagi river.

Another important work upon which, with some relief in the material situation, the Commission is becoming increasingly active, is the rehabilitation of primary distribution lines to carry higher voltages. A good start is reported to have been made on this job both in the Southern and Eastern Ontario divisions, and, as the re-insulations are carried out with "hot line" tools, there is no interruption to services. The object of higher voltages is to lessen power losses and to

assure a better regulated service to consumers.

It is pointed out that although the Commission is going "all out" to speed up its various power developments, they all take time to complete and cannot be expected to give immediate relief to the power supply situation. The biggest developments of all, too, in the very nature of things, will be the last to be brought into service. Several useful developments will, however, be completed before a very great lapse of time, and, it is believed, to some extent will ease the situation. They will also be an augury of the much bigger power supply to come, and, it is felt, will encourage consumers in "hard-riden" power areas to co-operate with the Commission by practising economy in the use of electricity during winter peak-load periods.

TREE SURGERY

**Forestry Is Important Branch In
Commission's Day-To-Day
Operations**

**By Harry M. Blake,
Hydro News**

When The Hydro-Electric Power Commission of Ontario acquired the plants of the Toronto Power Company at Niagara Falls and subsequently constructed its own Queenston-Chippawa development, it became the custodian of a sylvan heritage in many respects unique in Canada. Co-operating with the Dominion and Provincial governments and the local authorities, in plans for the embellishment of a locality which is a mecca for tourists from all parts of the world, the Commission has been busy over the years, and is now more actively engaged than ever, in carrying out important conservation tasks on its Niagara properties.

The spacious grounds surrounding the Ontario Power Plant constitute a veritable preserve of fine trees, including several varieties which are rarely found growing together. One would have to go far afield to find another spot where the hackberry, the Kentucky coffee tree, the Japanese heartnut and the English walnut hob-nob with the sour gum or pepperidge tree. In what other locality would you find the Camperdown elm, whose umbrella-like branches sweep the ground, with two hornbeams for its train-bearers? Do you know another place where in springtime the white flowers of the service berry and dark red bloom of the Judas tree are draped against a background of sugar maples and towering elms? Try to think of another spot where the white, the scarlet and the black oak grow side by side; where the white fir and the Japanese blue juniper share the lawns with the yellow birch, the red hawthorn and the tulip tree.

It is the duty of the Commission's forestry branch to look after all these trees. In addition, thirty-seven varieties of shrubs must be cared for. And elsewhere at the other power plants and along the banks of the Chippawa canal, Hydro foresters are also busy, trimming, pruning, planting and weeding, repaying by every possible attention to its environment the gifts that the world's greatest water fall is showering upon the favoured citizens of Ontario.

On a recent visit to the grounds of the Ontario Power plant, Hydro News found

forestry crews hard at work fertilizing, spraying and engaged in the highly scientific tasks of tree surgery. A. E. Potter, district supervisor of the forestry branch, was himself performing a surgical operation on a sugar maple.

An exposed spot had been noted on the stem of the maple about three feet from the ground and no time had been lost in making a diagnosis with brace and bit. Borings showed that rot had begun to set in and would have to be attended to immediately.

Spore Is Carrying Agent

Wood rots, it was explained, spread in trees in the same way as disease in human beings. A spore is the carrying agent. It comes into contact with the exposed wood and germinates, destroying cell structures. Some wood rots act very rapidly, "honeycombing" a tree in from two to three years. Other diseases spread slowly. In every case, the result is the same—the death of the tree and the liability of it being blown down by a strong wind even before the life has entirely gone out of it.

Having determined the exact extent of the decay in the maple and treated the bark around the infected spot with shellac to prevent it drying out, Mr. Potter, with a basket of tools hanging from a convenient limb, went to work to dig out the infection. The cavity had to be carefully shaped, as it was necessary not only to clear the infection but to provide a firm and non-irritating grip for the concrete fill-in which was to serve the same purpose as a dentist's "stuffing". When the lanceolate-shaped cavity was finished and the sound wood smoothed off, a drain-tube was inserted through the bark and off-set just below the bottom spear point of the cavity. This tube would drain off the "fluxing" caused by bacteriological action and the fermentation of sap in the tree. A sheet of three-ply tar-paper was then moulded to the shape of the cavity and carefully worked into place. Concrete was filled in over the tar-paper in sections so that when the trunk of the tree swayed under the weight of its branches in a high wind, the concrete filling would have something of the flexibility of a vertebrate's spine. After the concrete had properly dried, a waterproof dressing was applied.

"All this attention may seem a little fussy to the layman," remarked George

Bradford, the field supervisor of Hydro's forestry service, "but when I tell you that it has saved many of the valuable trees which would otherwise have succumbed to disease, and which could only have been replaced by nursery stock that would take forty or fifty years to mature, you can see how important it is to our work of conservation . . . I want to show you something."

He led Hydro News across the lawn to a noble elm whose magnificent symmetry has attracted the attention of many visitors.

"Ten years ago this tree was attacked by a fungus disease," Mr. Bradford explained. "We treated it in exactly the same way we are now treating the maple. You will have to look closely to see any signs of an operation scar on the trunk. That's the kind of healing we get from scientific treatment. This elm is now as healthy as any tree on the grounds. I shouldn't be surprised if it lived for another hundred years."

Cabling Sharp-Croched Trees

Close at hand Hydro foresters were preparing to cable the trunk-like branches of a sharp-croched tree to prevent it from splitting. Working aloft, secured by their safety ropes, were George Masko and Don McMullen. They had inserted tree hooks and had drawn the two branches together by block and tackle, and now they were measuring with a tape the distance between the hooks in order to determine the length of cable required. On the ground, Peter J. Hayes, sub-foreman of the Niagara forestry squad, was directing operations.

A short distance away stood another tree in which the start of some progressive fungus disease had just been noted. It would have to wait its turn for operative treatment. Ordinarily, a delay of a day or two would have occasioned no concern, but as the tree stood in an exposed position on the edge of the bank which descends sharply to Victoria Park, no chances were being taken of a sudden gale—remember the vagaries of the weather this spring?—bringing it down before attention could be given it. And three members of a Hydro forestry squad—Alexander Lapere, Earl Beckett and C. M. Philip, working under Foreman L. C. Warner—were already guying the elm to two sound neighbouring trees.

Eye-bolts were screwed into place fairly high up on the stem of the diseased tree and a few feet from the ground in the

(Continued on page 28)

AN OPERATION on a sugar maple. A. F. Potter, supervisor of Hydro's forestry division at Niagara Falls, is cutting the metal tube inserted to drain off the "flux" or fermented sap which would otherwise contact the bark and arrest healing. UPPER RIGHT—filling in concrete over a tar-paper base moulded to fit the operation cavity.



SECTIONAL FILLINGS in a tree have the flexibility of a vertebrate's spine. "When a high wind sways the trunk, the concrete never breaks or cracks," Mr. Potter (lower left) tells Hydro News as he slicks off the edges of the cavity before waterproofing. LOWER RIGHT—new spray equipment is used on Hydro trees.





The near tragedy reported in the Hydro News for July-August, Page 26, when two boys grasped an iron water-pipe leading into the lake and were unable to release their grip serves to illustrate a problem that is always present in distribution of electric power and about which there has been, and perhaps always will be, some controversy. Lack of agreement as to what steps should be taken to minimize hazards seems to develop from lack of realization of the fact that in many cases it is possible to drive rods (several of them) into the earth and even immerse water pipes in the lake as in this case without obtaining what is accepted as an electrically "good ground." Many such paths in parallel to earth tend to improve conditions but the waters in these lakes have been checked for electrical resistance and have been found to be very high. Under such conditions, it is not always feasible to obtain sufficiently low resistance through earth alone to ensure blowing of fuses in case of failure of insulation such as in a motor. The stray current thus carried into unauthorized channels and even exposed locations can become a serious menace.

The engineering solution in such cases is to have a good metallic conductor from the frame of such motor, or other metallic casing, back to the grounded side of the electrical supply circuit so that failure of insulation is promptly followed by blowing of the fuse or other circuit interrupter. This conductor may, in some cases, be the neutral of a three-wire circuit, or the grounded conductor of a two-wire circuit or even a separate conductor installed specially for this purpose. Whatever connections be made of this nature, they should be made only with the concurrence of the local inspector.

In many public places it might be prudent to insert insulating joints in the pipe-line, or a section of pipe of non-conducting material such as rubber hose or one of the new plastic materials. It is not difficult to obtain a resistance in such manner high enough to limit the stray current therein to quite safe values. Other methods of isolation are provided by the design of the equipment, e.g. wooden operating rods between motor and pump, belt-driven with motor and pump on wooden platform, etc.

In the meantime, the caution ex-

pressed in the last paragraph might well be emphasized in capital letters—"BEWARE OF A WATER-PIPE YOU MAY FIND IN A LAKE." Under present conditions it does not appear that such hazards can be completely taken care of except by the owner himself having his equipment regularly checked and tested. —W. B. Buchanan, Testing Engineer.

TREE SURGERY

(Continued from page 26)

trunks of the "anchor" trees. Cables were then adjusted and pulled just taut enough to hold the "sick" tree firmly in position without causing fretting or discomfort to the patient.

Punch-Hole Fertilization

When this task was completed, Foreman Warner's crew turned immediately to another job. This was the fertilization of a small group of trees bordering the lawns near the New York Central railway tracks. Joined by C. M. Philip and George Masko, who had just descended from their airy perches in the sharp-croched tree, the squad went to work on what is known as the punch-hole system. Around each of the trees a circle was drawn on the lawn under the tips of the branches. Holes were then cut at regular intervals and staggered to the base of each tree, the sod being carefully removed in caps to preserve the appearance of the lawn. Fertilizer containing the proper proportions of nitrogen, phosphorous and potash was then inserted in the holes and the sod caps replaced.

New Spray Truck

While this work was going on, subforeman Russel Joyce and his team-mate, Jack Mercer just returned from a line clearance job, were going over the equipment in Hydro's new spray truck. The vehicle accommodates a 350-gallon tank with a power take-off from the truck's motor. The pump installed with the tank will operate at a pressure of 1,000 pounds and delivers through the "gun" 22 to 25 gallons of finely broken-up spray per minute.

As in all Hydro operations, the "detail" for spraying jobs is planned well in advance. The truck moved fifty yards or so along the well-gravelled roadway. The hose was quickly unrolled, and a cloud of penetrating disinfectant and insecticide was soon spraying the top-most branches of a group of trees which had been marked "first" for attention.

Million Dollar View

Before leaving the grounds of the On-

tario Power Plant, Hydro News visited a spot where a break in the trees affords a superb view of the Horseshoe Falls. As a Chicago visitor is reported to have exclaimed, it is "the million dollar view". You look right down into the pool beneath the mighty cataract whence the spray arises in a continuous mist, which stirred by the winds, is carried in all directions, giving a sort of immortal verdancy to the park-like surroundings. Spanning the Falls from the American to the Canadian shore was a rainbow which, in the clear bright sunlight of that perfect June day, reflected every colour of the spectrum—a symbol of the enduring peace between two great democracies, and, as it might be hoped, an augury of a new world where war shall "reign" no more.

"BALDY" CAMPBELL PASSES SUDDENLY

"He died in harness, engaged at the work he loved, and beloved by all his associates."

This was the way the peaceful passing of Walter Graeme ("Baldy") Campbell at Aguasabon on July 20 was described to Hydro News.

Mr. Campbell has been in the service of the Commission less than seven years—since September 1940—but within that time there were few power development construction jobs with which he had not been prominently associated. At the time of his death he was assistant resident engineer at Aguasabon development.

Born in Perth County, Ontario, on August 3, 1880, Mr. Campbell matriculated from Mitchell High School, and going on to the School of Practical Science, graduated from the University of Toronto in 1902. For several years he was associated with the construction firm of O'Brien and Mullarkey and later headed his own firm of contractors on bridge and railway construction. His first contacts with Hydro were made during the construction of the Queenston-Chippawa development when he carried out the erection of several bridges in connection with Hydro's premier achievement, and they stand today as a monument to his engineering skill.

A courageous heart and a sense of humour enabled him to meet the vicissitudes of life with cheerful equanimity. Whenever enquiries were made as to his personal well-being, his invariable response is said to have been: "Physically fit; morally a giant."

Predeceased by his wife, Mr. Campbell leaves an only daughter, Miss Catherine Graeme Campbell, residing in Toronto.

IN MEMORY OF THE LATE SIR ADAM BECK

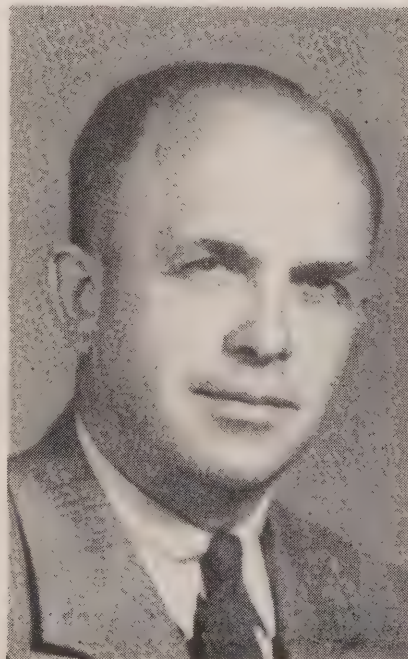


FRIDAY, AUGUST 15th marked the twenty-second anniversary of the death of Sir Adam Beck, former chairman of the Hydro-Electric Power Commission of Ontario, and in honour of his memory, wreaths were placed on his monument at University avenue and Queen street by officials from both the Ontario Hydro-Electric Club and the Toronto Hydro-Electric System. In the group on the left are: Gordon Norris, president of the Ontario Hydro-Electric Club; H. C. Davies and R. E. Brown, past presidents, and W. J. Greves, W. Olinoski, T. F. Howlett and J. A. S. Milne representing the Hydro branch of the Legion. Others who took part in the ceremony but who are not in the picture are: B. J. Forhan, secretary of the Club, and G. A. Honsberger, past president. To the right, in the group from the Toronto Hydro, are Bert Merson, vice-chairman, the Toronto Electric Commissioners, and J. S. Macgregor, treasurer, and M. White, manager of the stores and transportation department. Representing the city are controller J. M. Innes and J. W. Somers, O.B.E., city clerk.

SERVING ON MIDLAND PUBLIC UTILITIES COMMISSION



D. HURRIE



MAYOR C. M. VENT



R. L. MUSGROVE

COMMISSION APPOINTS ROTHWELL AND HARMER TO IMPORTANT POSTS

Further Step In Re-Organization To Meet
Present-Day Conditions



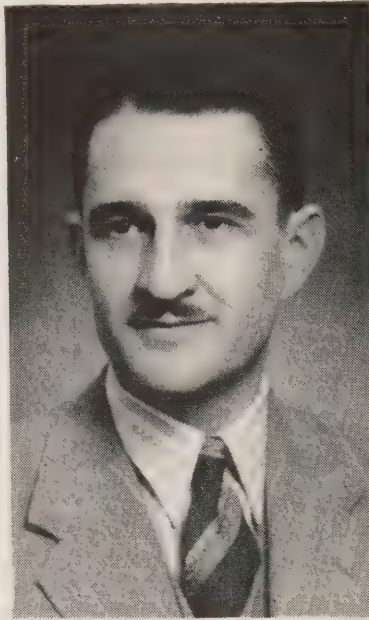
H. D. ROTHWELL

Marking a further step in the re-organization now proceeding to meet present-day demands and conditions, two important appointments have been announced by The Hydro-Electric Power Commission of Ontario in the naming of H. D. ("Doc") Rothwell as Special Assistant-Regions and W. Roy Harmer as Assistant Director of the Consumer Service Division.

Had Extensive Experience

Mr. Rothwell, a native of Gilford, Ontario, who has been identified with the Commission for the past 33 years, has had extensive experience both as district and system engineer. Joining the staff in June, 1914, he became associated with the municipal department. After the First World War, during which he served with the 6th Signal Corps, C.E.F. Siberia, with the rank of Lieutenant. Mr. Rothwell returned to the Commission to take over the duties of District Engineer for the Niagara District. In 1929, he became System Engineer for the Toronto, Kitchener, Stratford and Niagara areas, a position he held up to the present time.

Mr. Rothwell's academic record shows



W. R. HARMER

that he attended public school at Gilford, high school at Bradford and that he graduated from the University of Toronto in 1914 with the degree of B.A.Sc.

Worked With Edison

Mr. Rothwell's first position was with Thomas A. Edison at West Orange, New Jersey, where he worked in the Edison Laboratory at a salary of seven dollars and fifty cents a week. His duties largely involved making voltage tests on the alkaline storage battery, Mr. Edison, whose parents were both Canadians, became very friendly with Mr. Rothwell when he learned that the latter who was then 18, was also a Canadian. Doc's one regret is that he never kept a diary of the many interesting conversations he had with Edison.

As a young man while working his way through university, Mr. Rothwell served with a number of companies, including the Canadian Copper Company, now the International Nickel Company, Coppercliff; Tagona Water and Light, now the Lake Superior Power Company; The Midland Construction Company; Graves Bigwood Lumber Company and

the Canadian Westinghouse Company.

In his new position, he will be responsible to the Assistant General Manager - Administration for the co-ordination of the work carried out in the Commission's regional offices which are now being planned to facilitate Hydro services to the people of Ontario.

Was Co-ordinator During War

W. Roy Harmer, the newly-appointed Assistant Director of the Consumer Service Division, has been with the Commission since 1939 when he took over the duties of Industrial Engineer, Sales Promotion Department. In 1942 he became Supervising Industrial Engineer and in 1945, Departmental Engineer. During the war, Mr. Harmer was intimately associated with the Public Utilities War-time Workshop Board and served as co-ordinator of the Activities of the Board in Ontario. Approximately \$1,300,000 worth of parts for guns, corvettes, radar and other war equipment were produced under this plan which was better known as The Bits and Pieces Programme.

A native of Fullarton, Ontario, Mr. Harmer was educated at Fullarton public school, Mitchell high school and graduated from the University of Toronto with the degree of B.A.Sc. in 1930.

His first position was with the Canadian General Electric Company at Peterborough where, after completing the test course, he was engaged in induction motor engineering. He was next transferred to Toronto District where he served with the Company's apparatus sales engineering department for 9 years before coming to the Commission.

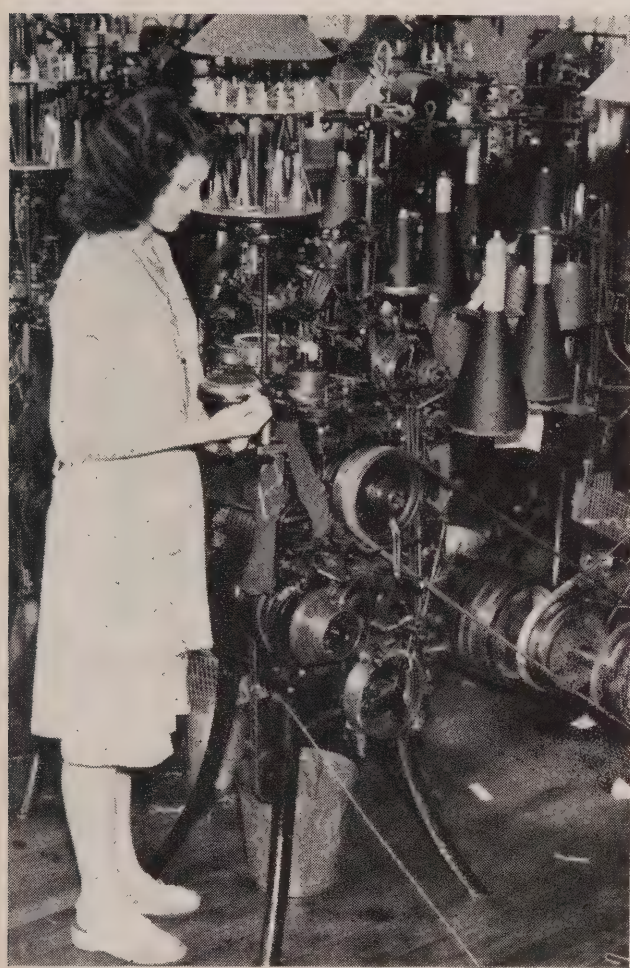
On Many Committees

Mr. Harmer, who is widely known among registered professional engineers is an active member of the A.I.E.E., and has served as District Secretary and is now treasurer of the Toronto Section. He is also a member of the A.M.E.U. and has been secretary of that association since 1944. He is also identified with the Ontario Electric Service League executive, is a member of the Electric Club of Toronto and immediate past president of the Allenby Home and School Association.

Mr. Harmer's duties with the Commission have brought him in close and active contact with the work of many important technical committees, including the Research Sub Committee on Water Heating, the Sub Committee on Space Heating, the Working Committee on Frequency and the Load and Resources Committee.

In his new position, he will assist M. J. McHenry, Director of the Consumer Service Division, in the overall direction of the various sections of the division.

HYDRO AT WORK

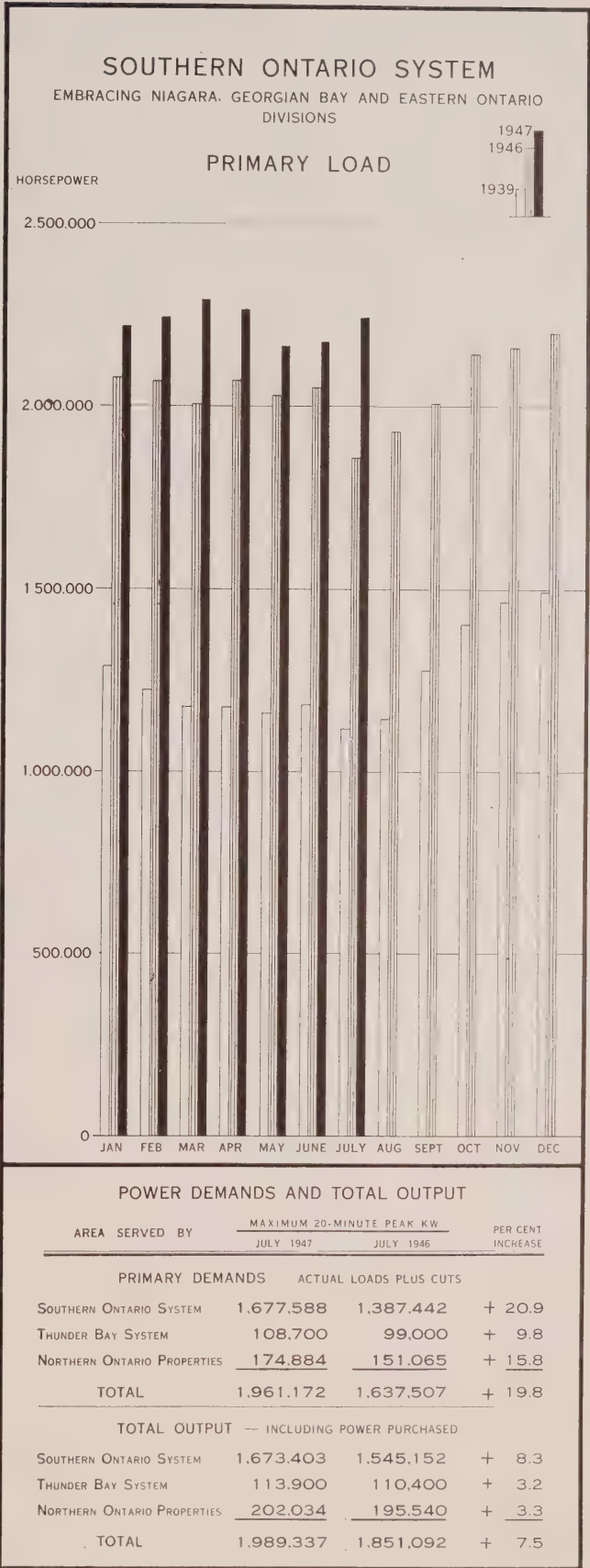


This electrically-powered knitting machine that can turn out one sock after another in rapid succession should be a cheerful sight to that part of the male population who have been sock-less of recent years.

It is, as a matter of fact, a direct descendant of the first automatic knitting machine which was invented away back in 1589 by an Englishman, William Lee, but which was prohibited by Queen Elizabeth for fear it would ruin the country's hand knitting industry. It was not until 1816 that the idea was revived and this time the circular knit machine was invented and came into common use and was the model for all designs down to the present day.

The process of mechanical knitting is somewhat different from weaving in that it employs only one thread or set of threads instead of two. In the modern factory pictured here a five horsepower motor runs 30 of these machines. A skilled operator handles three machines at once and can turn out four and a half dozen pairs in eight hours.

The ribbed top is made on another machine. The operator then takes the top and transfers it to this machine, the needles are arranged in a circle and the sock is automatically knit in a circular shape. The operator merely has to watch the yarns and see that everything is working correctly. The sock then goes on to a third machine which "loops" or sews up the toes and the process is then completed.



MUNICIPAL LOADS, JUNE, 1947

SOUTHERN ONTARIO SYSTEM NIAGARA DIVISION (25-Cycle)

	H.P.	Domes- tic Con- sumers		H.P.	Domes- tic Con- sumers		H.P.	Domes- tic Con- sumers
Acton	2,207	544	Erieau	261	197	Palmerston	773	400
Agincourt	268	168	Erie Beach	37	79	Paris	2,288	1,215
Ailsa Craig	191	147	Essex	736	528	Parkhill	335	315
Alvinston	169	205	Etobicoke	13,882	6,157	Petrolia	1,082	825
Amherstburg	1,426	734	Exeter	1,077	544	Plattsville	257	118
Ancaster Twp.	520	394	Fergus	1,824	770	Point Edward	1,946	349
Arkona	96	117	Fonthill	222	300	Port Colborne	2,204	1,655
Aurora	1,909	793	Forest	762	510	Port Credit	1,181	649
Aylmer	1,092	758	Forest Hill	8,424	3,567	Port Dalhousie	1,313	691
Ayr	376	227	Galt	14,325	4,296	Port Dover	675	750
Baden	666	168	Georgetown	2,800	833	Port Rowan	144	171
Beachville	978	167	Glencoe	286	230	Port Stanley	1,329	825
Beamsville	719	399	Goderich	2,247	1,361	Preston	5,104	1,689
Belle River	299	314	Granton	82	85	Princeton	230	98
Blenheim	760	560	Grimsby	1,068	655	Queenston	209	81
Blyth	189	184	Guelph	15,277	5,703	Richmond Hill	727	414
Bolton	354	172	Hagersville	1,488	406	Ridgetown	691	599
Bothwell	199	185	Hamilton	174,432	43,700	Riverside	1,653	1,559
Brampton	4,234	627	Harriston	709	378	Rockwood	195	174
Brantford	25,408	8,337	Harrow	772	350	Rodney	193	239
Brantford Twp.	2,252	1,476	Hensall	269	210	St. Catharines	32,684	8,742
Bridgeport	286	178	Hespeler	3,864	825	St. Clair Beach	126	102
Brigden	209	125	Highgate	114	107	St. George	243	154
Brussels	345	256	Humberstone	730	738	St. Jacobs	417	141
Burford	413	235	Ingersoll	3,991	1,568	St. Marys	2,391	1,076
Burgessville	117	64	Jarvis	211	163	St. Thomas	10,068	4,718
Burlington	1,913	1,234	Kingsville	803	641	Sarnia	8,667	5,403
Burlington Beach	625	732	Kitchener	35,585	8,718	Scarborough Twp.	7,039	5,950
Caledonia	501	452	Lambeth	161	140	Seaforth	1,231	524
Campbellville	71	50	LaSalle	372	259	Smithville	481	185
Cayuga	271	186	Leamington	2,508	1,688	Simcoe	3,217	1,678
Chatham	8,971	4,575	Listowel	2,000	801	Springfield	111	133
Chippawa	438	364	London	48,213	19,859	Stamford Twp.	3,916	2,497
Clifford	152	130	London Twp.	574	494	Stoney Creek	350	289
Clinton	1,012	593	Long Branch	2,088	1,564	Stouffville	625	408
Comber	170	120	Lucan	280	186	Stratford	9,046	4,561
Cottam	115	131	Lynden	186	105	Strathroy	1,852	876
Courtright	77	91	Markham	505	350	Streetsville	726	208
Dashwood	160	102	Merlin	117	124	Sutton	650	468
Delaware	101	71	Merritton	11,542	962	Swansea	3,605	2,096
Delhi	635	609	Milton	1,914	555	Tavistock	831	300
Dorchester	133	157	Milverton	582	263	Tecumseh	501	711
Drayton	170	167	Mimico	3,789	2,306	Thamesford	342	147
Dresden	767	466	Mitchell	989	521	Thamesville	301	243
Drumbo	145	90	Moorefield	114	56	Thedford	172	166
Dublin	76	61	Mount Brydges	135	166	Thorndale	145	83
Dundas	4,200	1,458	Newbury	55	70	Thorold	3,585	1,274
Dunnville	1,997	1,063	New Hamburg	841	384	Tilbury	1,179	502
Dutton	304	234	Newmarket	2,661	1,022	Tillsonburg	2,159	1,243
East York Twp.	12,858	11,918	New Toronto	13,599	2,029	Toronto	425,068	154,302
Elmira	1,973	554	Niagara Falls	13,809	4,984	Toronto Twp.	5,613	3,065
Elora	652	355	Niagara-on-the-Lake	1,086	623	Wallaceburg	6,443	1,387
Embro	220	125	North York Twp.	14,859	7,019	Wardsville	74	65
			Norwich	572	391	Waterdown	355	280
			Oil Springs	210	104	Waterford	548	397
			Otterville	167	143	Waterloo	8,246	2,306
						Watford	516	312

MUNICIPAL LOADS, JUNE, 1947

	H.P.	Domes- tic Con- sumers
Welland -----	12,661	3,264
Wellesley -----	209	137
West Lorne -----	508	227
Weston -----	5,946	1,700
Wheatley -----	322	237
Windsor -----	61,755	26,609
Woodbridge -----	1,030	314
Woodstock -----	9,742	3,448
Wyoming -----	152	166
York Twp. -----	25,804	21,946
Zurich -----	181	149

(66 2/3-Cycle)		
Bronte -----	185	244
Oakville -----	1,989	1,285
Trafalgar Twp. -----	855	573

GEORGIAN BAY DIVISION

(60-Cycle)		
Alliston -----	684	447
Arthur -----	238	199
Bala -----	901	336
Barrie -----	5,934	2,471
Beaverton -----	496	331
Beeton -----	122	148
Bradford -----	584	291
Brechin -----	59	53

Cannington -----	374	262
Chatsworth -----	129	108
Chesley -----	893	456
Coldwater -----	255	159
Collingwood -----	3,331	1,650
Cookstown -----	134	119
Creemore -----	242	176

Dundalk -----	305	210
Durham -----	682	464

Elmvale -----	276	191
Elmwood -----	124	72

Flesherton -----	133	126
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Grand Valley -----	262	184
Gravenhurst -----	1,551	593

Hanover -----	1,871	850
Holstein -----	26	63
Huntsville -----	1,547	744

Kincardine -----	1,088	741
Kirkfield -----	28	37

Lucknow -----	529	287
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MacTier -----	173	128
Markdale -----	271	231
Meaford -----	1,204	757
Midland -----	5,028	1,625
Mildmay -----	243	184
Mount Forest -----	792	502

	H.P.	Domes- tic Con- sumers
Neustadt -----	48	110
Orangeville -----	1,212	746
Owen Sound -----	8,466	3,663
Paisley -----	235	202
Penetanguishene -----	1,442	773
Port Carling -----	373	211
Port Elgin -----	791	509
Port McNicoll -----	150	241
Port Perry -----	521	381
Priceville -----	20	38
Ripley -----	134	129
Rosseau -----	64	58
Shelburne -----	416	314
Southampton -----	810	567
Stayner -----	422	341
Sunderland -----	213	140
Tara -----	181	164
Teeswater -----	218	233
Thornbury -----	175	257
Thornton -----	48	67
Tottenham -----	183	161
Uxbridge -----	523	423
Victoria Harbour -----	157	271
Walkerton -----	1,347	687
Waubaushe -----	245	235
Warton -----	535	437
Windermere -----	135	64
Wingham -----	1,131	560
Woodville -----	135	116

EASTERN ONTARIO DIVISION

(60-Cycle)		
Alexandria -----	489	415
Almonte -----	652	689
Apple Hill -----	49	66
Arnprior -----	1,803	891
Athens -----	188	183
Bath -----	69	64
Belleville -----	9,578	3,939
Bloomfield -----	164	181
Bobcaygeon -----	83	409
Bowmanville -----	3,771	1,234
Braeside -----	292	92
Brighton -----	681	563
Brockville -----	9,503	3,101
Cardinal -----	548	394
Carleton Place -----	2,546	1,076
Chesterville -----	450	248
Cobden -----	228	160
Cobourg -----	2,877	1,443
Colborne -----	324	285
Deseronto -----	362	395
Finch -----	194	107
Frankford -----	234	262
Hastings -----	200	238
Havelock -----	198	295

	H.P.	Domes- tic Con- sumers
Iroquois -----	448	279
Kemptville -----	562	393
Kingston -----	20,501	7,867
Lakefield -----	523	360
Lanark -----	174	173
Lancaster -----	60	116
Lindsay -----	4,522	2,289
Madoc -----	326	318
Marmora -----	191	249
Martintown -----	79	56
Maxville -----	150	176
Millbrook -----	175	182
Morrisburg -----	583	444
Napanee -----	1,927	897
Newcastle -----	295	230
Norwood -----	281	242
Omeme -----	275	173
Orono -----	135	183
Oshawa -----	21,998	6,765
Ottawa -----	40,784	15,658
Perth -----	2,257	1,110
Peterborough -----	21,650	6,702
Pictou -----	1,996	1,336
Port Hope -----	3,835	1,455
Prescott -----	1,711	815
Renfrew -----	1,039	1,366
Richmond -----	110	85
Russell -----	145	119
Smiths Falls -----	4,288	2,012
Stirling -----	462	293
Trenton -----	6,645	1,833
Tweed -----	465	321
Warkworth -----	108	135
Wellington -----	334	343
Westport -----	154	149
Whitby -----	2,087	1,054
Williamsburg -----	130	86
Winchester -----	675	309

THUNDER BAY SYSTEM

(60-Cycle)		
Fort William -----	17,801	7,332
Nipigon Twp. -----	364	243
Port Arthur -----	26,816	6,099

NORTHERN ONTARIO PROPERTIES

Nipissing District (60-Cycle)		
North Bay -----	7,208	3,379
Patricia District (60-Cycle)		
Sioux Lookout -----	390	512
Sudbury District (60-Cycle)		
Capreol -----	567	344
Sudbury -----	12,646	8,734



Isn't it a Fact?

● It matters little what you want to buy these days . . . soap, a shirt, a new car . . . even electricity (which you don't have to line up for) continues to be scarce in Southern Ontario.

Have you tried to build a home lately? . . . tried to buy building materials of any kind. What a headache! How would you like to be shopping for what's needed for a new electric power plant? Unimaginable amounts of concrete, steel and other materials, as well as tremendous quantities of electrical equipment, would have to be sought out and purchased.

It takes several months now to get such equipment as transformers and costs are up by more than half. The bigger they are the harder they are to get.

What about the huge generating stations required to supply Ontario with an additional badly needed half-million horsepower? Well, they are being built. They were started years ago. But they cannot all be ready in 1947. Some won't be ready next year.

In the meantime, demand for electricity is growing faster than new power plants. Few people anywhere use as much electricity per person as in Ontario. Few have as much to use. Enjoy your low-cost electric power, but use it wisely. Your Hydro Commission is doing everything possible to increase the supply; but it will still be necessary to conserve electricity this fall and winter.



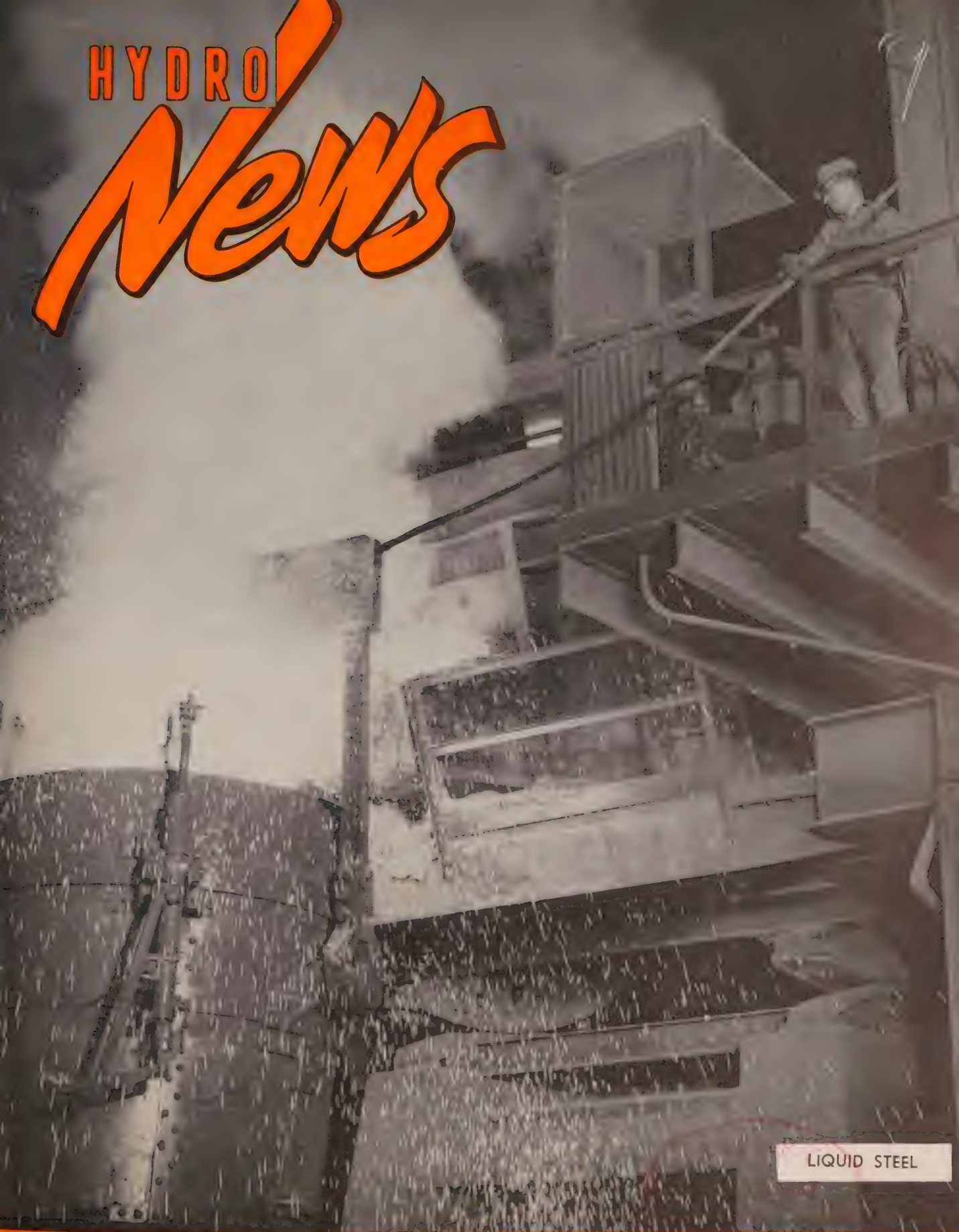
DON'T BREAK
INSULATORS



DON'T BREAK
STREET LIGHTS

THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

HYDRO! *News*



LIQUID STEEL

ELECTRICITY

Maintains Employment . . .

Keeps Pay Envelopes Full

PLEASE DON'T WASTE IT!

Electric power is vital to Industry, and Ontario is experiencing an era of high production, unparalleled in its history. Contrary to expectations, the demand for electric power did not drop sharply following the war. More electric power is actually being used today for production of peacetime goods than was required at any time to forge weapons for Victory. This demand is constantly increasing and, during the next six months, Hydro facilities will be strained to the utmost.

New Hydro developments, planned to keep pace with Ontario's growth, were halted during the war years. They have since been hampered by shortages of men, materials and equipment. However many new stations to deliver electric power are being rushed to completion. Some are already in operation. But the need for saving electric power in your own home, during the Fall and Winter months, is *urgent* if the needs of Industry and Agriculture are to be fully served and employment maintained at peak levels.

Won't you please play your part? Remember—even a *little bit* of electricity, conserved by hundreds of thousands, *helps a lot*. It's *your* Hydro. Use it wisely so that Hydro facilities can more adequately meet the demands of all consumers.

**THE HYDRO-ELECTRIC
POWER COMMISSION
OF ONTARIO**



**Clip out and retain
for reference**

Here are a few ways you can

Save

ELECTRICITY

Turn off all unnecessary lights. Don't forget about burning lights in empty rooms, halls, basement, attic, porch and garage. Eliminate all colored bulbs.

Keep lamps, reflectors and shades clean. Dusty fixtures waste as much as 25% of your light.

When kettle sings, turn off switch. Stored heat will bring it to a full boil. Keep kettle free from lime.

When cooking, use "High" heat for as little time as possible. Then turn to "Low" and use stored heat.

Use oven for cooking complete meals, rather than the cooking surface. Only one element is required for the oven process while three or four elements are needed for the cooking surface.

Use the correct size of cooking utensil on the proper size element.

When cooking vegetables, use a minimum amount of water.

Defrost refrigerator, regularly, when $\frac{1}{4}$ inch of frost has accumulated on the evaporator.

Where water is electrically heated, please use it sparingly. A drop a second from a leaking hot water tap can waste as much as 175 gallons a month.

Fill washing machine to water line only and keep lid on tub when washing. Do not overload.

Wherever possible, use the wringer at same time as clothes are being washed in the tub.

Please do not use portable electric heaters as they place a heavy strain on your Hydro System.

Your toaster, vacuum cleaner, electric iron or other electrical appliances should not be used any longer than required.



THE HYDRO - ELECTRIC POWER COMMISSION OF ONTARIO

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W. ROSS STRIKE, K.C., 2ND VICE-
CHAIRMAN.

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(MEMBERS OF C.I.E.A.)

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THE FRONT COVER



ONE of the most spectacular sights in modern industry, the tapping or pouring of a "melt" furnace where thousands and thousands of pounds of ore or scrap metal have been converted into a seething cauldron of liquid fire, is portrayed on this month's front cover picture. The furnace is discharged through an open conduit into a mammoth ladle built to receive the entire load. As the molten metal streams into the receiving ladle, great clouds arise, shot with flame, and a million sparks fly off in all directions. This photograph is an attempt to capture the scene as one of the big electric furnaces at Atlas Steels was tapped.

Volume 34

October, 1947

Number 10

CONTENTS

	Page
DeCew Falls Plants - - - - -	2
Page Three - - - - -	3
O.M.E.A. Conventions (Districts Nos. 2 And 3) - - -	4
Plans In Plaster Of Paris - - - - -	13
Commission's Exhibit At C.N.E. - - - - -	16-17
Hydro Power Paces Atlas - - - - -	18
Dr. R.W.I. Urquhart's Page - - - - -	22
Airing Farm Topics From Coast To Coast - - -	23
Plans Completed For "Your Hydro Night" - - -	25
Hydro Home Forum - - - - -	26
Michener Stresses Change In Canada - - - -	27
This And That - - - - -	28
New A.M.E.U. Secretary-Treasurer - - - -	29
Lighter Lines - - - - -	30
District No. 3 Visit to Aguasabon Plant - - -	31
Fort William "Front Line" - - - - -	32
Hydro At Work - - - - -	33
Monthly Load Summary - - - - -	33





Picture Of The Month

ON SEPTEMBER 26, Prime Minister George A. Drew turned the switch and set in motion the second 70,000 horsepower unit which has been added to the new DeCew Falls plant shown in the centre of this aerial photograph. The old DeCew development can be seen in the background.

WE CAN BE THANKFUL

As the festival of Thanksgiving approaches once more, it seems to be expected of us, as we sit down to our roast turkey and cranberries, that we pause to count over our various blessings. Glancing rapidly at the current scene, there may seem little reason for being thankful for anything.

However, the surest method is probably to take a good look at our British and European neighbours just across the Atlantic. In spite of the fact that the war has been over for two years, they are still wrestling with the elementary problems of getting enough to eat and keeping clean, clothed and warm. Over here our grumble is that we can't afford a new coat but not that we haven't got a coat; we complain bitterly that food is so high-priced, but we can still eat; and in spite of talk of fuel shortages (among the many others) none of us have yet gone through the utter misery of a winter of unheated houses and offices and cold water taps.

In Britain this winter it is reported that people will enjoy the benefits of electricity at only certain times of the day and, possibly for only a few days in the week. A rather grim prospect.

By way of contrast, while the people of Ontario are being asked to save power at all times and use it only for essential purposes pending completion of new power plants, they are not being restricted to certain periods weekly.

If anyone still feels a thankful-for-nothing mood coming over them, we would strongly recommend that first, they quickly pack up a box for overseas with some of the small comforts of daily life that we take so much for granted and, after that, let them check over some of the simple accessories of their own life—warm water and soap, clothes that aren't from someone's charity bag, clean, nourishing food—remembering that millions of people on the globe this very day would prize them above rubies.

TREE CUSTODIANS

When a great natural resource like water power is handled by the public enterprise system as it is in Ontario, it means that that resource, to paraphrase a famous definition, is put to use by

the people, for the people.

It is natural that publicly-owned Hydro should take special care of its own properties, not only from the efficiency point of view but also because they represent some of the finest parklands and forest areas in the province.

Hydro has a Forestry Branch of its own, whose work, although little publicized, should be of great interest to every Ontario citizen. A staff of forestry specialists and trained crews for field work keep a watchful eye on all trees that come under Hydro jurisdiction — no small matter.

To begin with they must watch some 250,000 trees growing along 6,000 miles of low and high tension transmission lines as well as 2,700 miles of rural line. Fifteen crews, operating from strategic centres, keep watch on these trees, taking out diseased ones that might blow down and cause damage or doctoring those that can be saved.

As well as preserving trees, Hydro has undertaken considerable reforestation. For example, along the banks of the Queenston canal, 90,000 trees were planted back in 1931-32 and since then 105,478 more have been added. Recently there have been reforestation projects at Eugenia and at Sidney station at Trenton.

One of the show places in Ontario is the park around the Ontario plant at Niagara Falls. Here Hydro is custodian to one of the finest and most handsome collection of trees to be found anywhere. The district supervisor of the forestry branch sees that these trees are all kept in good shape.

Hydro men sent out to operate plants scattered all through Northern and Southern Ontario take a natural interest in their surroundings and look after their trees well for both practical and aesthetic reasons. On the practical side they know that trees help to screen off debris from canals and forebays, and also provide against the erosion of river banks, to name only two points. On the other side, plants are often situated in holiday country where it is important that the natural surroundings be kept in good condition for the enjoyment of the people of this province.

Year in and year out, Hydro's trained foresters are rendering an invaluable service to the people of Ontario — a service which is carried out quietly and efficiently — and without any fanfare.

UNPRECEDENTED DEMANDS FOR POWER BAROMETER OF ONTARIO'S PROGRESS

Necessary For All Classes Of Consumers To Co-Operate In Saving Electricity Pending Completion Of New Power Plants, Delegates To O.M.E.A. Conventions Are Told—Commission's New Regional Offices To Be "Miniature Head Offices"—Report On Proposed 60-Cycle Frequency To Be Ready Within Two Or Three Months—Hon. George H. Challies Predicts "Wonderful Future" For Ontario

To meet present unprecedented demands for Hydro power, which can be regarded as a barometer of Ontario's phenomenal industrial and economic advance, it will be necessary for all classes of consumers to co-operate in using electricity for only essential purposes, at all times, pending completion of new power plants now under construction. These observations, along with the belief that sincere and intelligent co-operation on the part of consumers would obviate any need for controls or restrictions were expressed by speakers at recent O.M.E.A. conventions.

District No. 2 convened at the Royal Muskoka Hotel, on September 4, while District No. 3 met at the Royal Edward Hotel, Fort William, on September 10 and 11.

At these conventions Hon. George H. Challies, First Vice-Chairman, and W. Ross Strike, K.C., Second Vice-Chairman, of The Hydro-Electric Power Commission of Ontario, along with a number of the Commission's top-ranking officials, including R. L. Hearn, General Manager and Chief Engineer, A. W. Manby, Assistant General Manager—Administration, and M. J. McHenry, Director, Consumer Service Division, discussed a wide range of topics ranging from power supply problems to the projected St. Lawrence development.

Speaking on the latter, Mr. Challies remarked: "I think the St. Lawrence is far nearer than we anticipate."

Mr. Strike, in discussing the re-organization of the administrative structure of the Commission to keep pace with the phenomenal growth of Hydro, stated that the regional offices which would be set up in the near future would be "miniature head offices" designed to bring the Commission in closer contact with the municipalities and to solve municipal problems at the regional office level.

Mr. Strike also announced that a complete report on the proposed 60-cycle frequency changeover would likely be available within the next two or three months. "This is a tremendous problem so far as Southern Ontario is concerned. We want to be sure that we are as close to the

right answers as possible before making a final decision," he said.

DISTRICT NO. 3 CONVENTION

R. G. Walsh, Chairman of the Port Arthur Public Utilities Commission, presided at the District No. 3 convention luncheon at which Mayor Garfield Anderson welcomed the delegates and guests.

In his address, Mr. Challies remarked that since hostilities had ceased many people were speculating upon the future of Hydro. To compare conditions following this war with those following the First World War was exceedingly difficult, he emphasized. The circumstances were entirely different. The period 1914-1921, he pointed out, was one in which Hydro was just getting into its stride. The increase in the growth of the Commission during the First World War period was about six-fold. In the past six years the increase in the Commission's capital had been 17 per cent.

"The unfortunate part of it," remarked the First Vice-Chairman, "is that in the past six years the question of increased capacity could not be considered. We have to catch up with that and also add the growth since the end of the war."

Continuing, Mr. Challies said: "Gentlemen, no one can realize, unless you are close to the picture, the wonderful future of Ontario. I am sure I do not need to enlarge because you people in the Thunder Bay System cannot but realize what is going on here. You can hardly keep pace with what is going on. It is not very far back—in 1923—when the Gregory Commission Report described the plant on the Nipigon River as a white elephant. That white elephant has grown into one of the best developments in this area and you still require more. It is indicative of the period we are in."

Mr. Challies next reviewed the tremendous programme of construction now under way—a programme which, when completed, will make available an additional 900,000 horsepower. He described the material supply situation as "disconcerting, annoying and disappointing." Applications for new lines, he said, had been increasing more rapidly than the Commission could keep pace with them.

Mr. Challies recalled that it was only a matter of a few years ago when it had been necessary to go out and "sell" Hydro to the farmers. In some cases, farmers who had signed contracts had cancelled them. This picture had completely changed. Today farmers were coming in to sign contracts and wanting to know when they could get power. The reason for that, stated Mr. Challies, was obvious. Farmers were more prosperous, while the rate structure adopted by the Commission in 1944 had further stimulated the demand for Hydro.

Ready To Go Ahead

This year, even under the most discouraging circumstances, the speaker continued, the number of miles of new rural Hydro line would be over and above the average of the past. Last year, he intimated, the Commission's programme provided for the construction of 2,000 miles of rural line but they had been able to build only half of that. Mr. Challies declared that as soon as materials were available the Commission was ready and able to go ahead with this construction. He pointed out, for example, that the Linemen's Training School had worked out far better than they had anticipated. As a result, they had a sufficient number of trained men to proceed with the work when the materials became available.

Mr. Challies assured the delegates that so far as Northwestern Ontario was concerned, that they were getting their full share of material. "We are not forgetting the needs of the people in the rural areas," he declared. "I can conceive of no greater duty of this Commission and Government than that of looking after rural areas. As soon as the whole Province is electrified the more contented people there will be."

Mr. Strike, who was introduced to the District No. 3 delegates by Commissioner F. G. Lovelady of the Port Arthur Public Utilities Commission, reviewed in some detail the work which had been proceeding in connection with the reorganization of the Commission's administrative structure. He also discussed the present

(Continued on page 6)



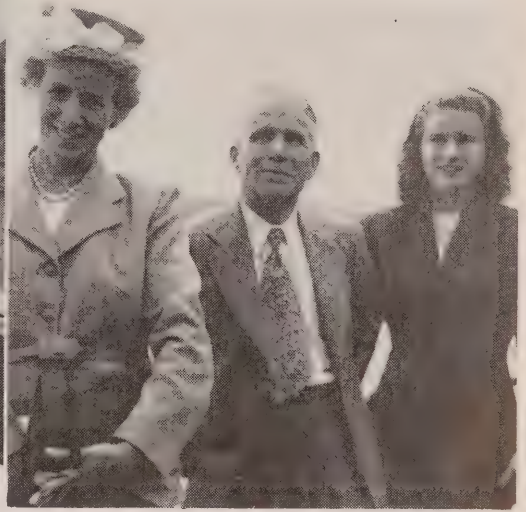
IT WAS a beautiful September day and these delegates look as though they were fully enjoying the boat trip up the Muskoka Lakes to the Royal Muskoka Hotel where the Georgian Bay Municipal Electric Association had their annual meeting recently. Included in the group are: Frank Yon, Ewart Haacke and Alex. McTavish.



THIS group we have, left to S. E. Preston, Manager, General Public Utilities Commission; M. J. McHenry, Director Consumer Service Division, O.C.; Mrs. Kathleen Kestell, Secretary-Treasurer, O.M.E.A.; and F. Gordon of Kitchener Public Utilities Commission.



H. O. HAWKE of the Galt Public Utilities Commission talks to Mrs. Kestell and Mrs. J. R. Beaulieu, (left) wife of the Chairman of the Penetanguishene Water and Light Commission.



ON THE left is Mrs. R. M. Durnford, wife of the President of the O.M.E.A.; George F. Hutcheson, Chairman, Huntsville Public Utilities Commission and President of District No. 2 O.M.E.A., with his daughter, Marion.



SILHOUETTED AGAINST a blue sky, James A. Blay, Manager of Promotion, Consumer Service Division, (left) talks things over with George F. Hutcheson, Chairman of the Huntsville Public Utilities Commission and President of District No. 2 Georgian Bay Municipal Electric Association.

UNPRECEDENTED DEMANDS

(Continued from page 4)

unprecedented demands for Hydro power and pointed out that Ontario was not alone in facing this problem. Very stringent restrictions, stated Mr. Strike, had been imposed in Britain, Australia and New Zealand, while they had also been running into considerable difficulty in the United States. The speaker said that it was a problem with which they had to wrestle. He believed, however, that the people of Ontario fully appreciated the situation and that they would all co-operate in trying to keep the province on an even keel by not wasting electricity at any time pending the completion of important new developments now under construction.

In this connection, Mr. Strike remarked: "We should be able to weather the storm. We are bringing in plants this year that will take care of part of the increased demand and normal growth. We propose to go directly to our consumers and tell them that we require their co-operation in seeing to it that no power is wasted at any time and that it is used for only essential purposes. If we can get the co-operation of everybody, we will be able to successfully meet the demands for power and carry on in such a way as not to disturb the economic life of the Province. None of us wants to go back to controls and restrictions. The trend is rather away from them."

Mr. Strike next directed attention to the question of costs which, he said, were going up in every field. While Hydro costs were going up, however, he did not mean that consumer rates were going up. There was, he said, no apparent indication of that at the moment. At the same time, Mr. Strike pointed out that at present a survey was being conducted to determine whether Hydro's reserves and the entire rate structure, which had been set up in earlier years and in the light of experience, were in keeping with present day conditions.

Great Group Of People

In conclusion, the Commission's Second Vice-Chairman paid high tribute to all Hydro employees. "I think," he said "it is one organization in which every employee feels he is identified with a great group of people who are working hard to give service and who are proud to belong to that group."

R. M. Durnford, President of The Ontario Municipal Electric Association, who was introduced by Clarence H. Moors, Chairman of The Fort William Hydro-Electric Commission, brought greetings from the O.M.E.A. and from District No. 8, as well as from the Sarnia Commission.

Mr. Durnford recalled that the O.M.E.A. had been formed on February 12, 1912, and that its history had paralleled the growth of Hydro. Continuing, he said that Hydro was something that was very unique. It had baffled a good

many students of public affairs. One could travel all over the world and find nothing like it. It was definitely non-partisan and had to be kept non-partisan. They had seen electricity grow in their lifetime to the point where it had become part and parcel of their mode of living.

Mr. Durnford stressed the fact that it was important that every municipality within the Hydro family should go forward with full unity of purpose and in the spirit of one for all and all for one.

When speaking at the banquet in the evening, he pointed out that the O.M.E.A. comprised eight districts, each functioning on its own as a separate district but clearing through its own central executive and holding a general convention once every year in March when they crystallized the thinking and suggestions of all districts for proper action.

"We are," said Mr. Durnford, "a sort of watch dog that has gone along with the Commission since 1912, keeping track of the effect Hydro's policies were having on ultimate consumers."

Both Mayor Garfield Anderson, of Fort William, and Mayor Charles Cox, of Port Arthur, joined in extending greetings to the large gathering of delegates and guests in attendance at the evening banquet at which C. H. Moors presided.

In the course of a brief address, Mr.

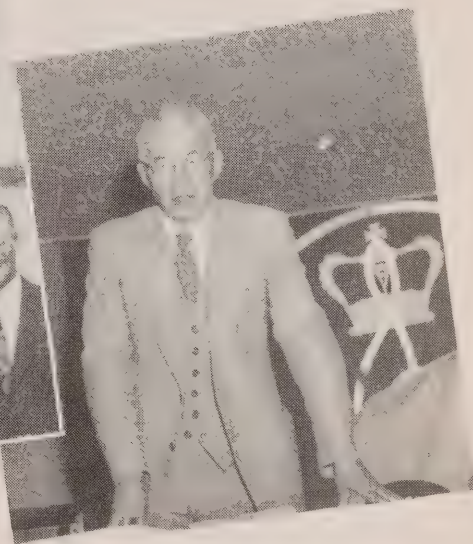
(Continued on page 8)



HERE ARE some of the men who are engaged in making the 3,500-foot tunnel at the site of Hydro's new 55,000 horsepower development now under construction on the Agnasabon river. They had just come off duty and were swinging past in the truck when the Hydro News' photographer cut in to get this picture.



MRS. KATHLEEN KESTELL, Secretary-Treasurer of the O.M.E.A., and A. W. Manby, (right) Assistant General Manager—Administration, H.E.P.C., listen with interest to the words of welcome extended by J. Frank Kelly, Mayor of Huntsville.



R. M. DURNFORD, (left) President of the O.M.E.A. brings greetings from the parent association. Included in this group of delegates are R. K. Pile, H.E.P.C.; E. M. Soden and Andrew Kellock, Jr., Huntsville Public Utilities Commission; Alex. McTavish; H. I. Gwilliam, Gravenhurst Electric Light and Water Commission. On the right is R. L. Hearn, General Manager and Chief Engineer of The Hydro-Electric Power Commission of Ontario.

IT WAS generally agreed by all the delegates that the boat trip was exceedingly pleasant. Included in this group are C. J. Halliday, Chairman, Chesley Public Utilities Commission; N. A. Belfry and A. W. St. John, Uxbridge Public Utilities Commission; Ewart Haacke, Editor, Electrical News and Engineering, Toronto.





THERE WERE more than three men in a boat when delegates to the District No. 2 O.M.E.A. convention sailed from Gravenhurst for the Royal Muskoka Hotel—the convention rendezvous. Many ladies accompanied their husbands. The upper camera impression shows the boat with delegates aboard. At the hotel, the Hydro News' photographer got this group picture (lower) which includes: R. L. Hearn, General Manager and Chief Engineer; A. W. Manby, Assistant General Manager—Administration; Osborne Mitchell, Secretary, all of the H.E.P.C.; R. M. Durnford, President, O.M.E.A.; H. O. Hawke, Galt Public Utilities Commission; W. Ross Strike, K.C., Second Vice-Chairman, H.E.P.C.; Dr. W. J. Chapman, St. Catharines Public Utilities Commission; M. J. McHenry, Director, Consumer Service Division, H.E.P.C.; R. D. Boyes, Alliston.

UNPRECEDENTED DEMANDS

(Continued from page 6)

Challies reiterated the fact that it was difficult for people to fully appreciate the tremendous progress which Ontario was making at the present time.

To emphasize his point, he cited statistics to show that from January 1 to the end of July of this year, permits issued for new factories, stores, alterations, additions, etc., totalled \$47,500,000. The previous seven-month figure, he said, was less than \$22,000,000.

When discussing the growth of Hydro, Mr. Challies said that the combined total assets of the Commission and the municipalities were now approximately \$575,000,000 and that it was the third largest corporate body in Canada, being exceeded only by the railways which were Dominion-wide in their operation.

Continuing, the speaker said that the people of the Thunder Bay district had reason to be proud and happy about the growth of their district. He assured them that Hydro was conscious of their needs and that careful study was being given to their problems.

In his evening address, Mr. Strike told

the delegates that the Commission was there to serve the people of the province and give them every possible assistance to get the most out of their Hydro-Electric System.

Power Supply Discussed

During the afternoon session of the District No. 3 convention, delegates asked if the Commission felt confident that they had sufficient power available in the district to meet the expected demand for primary power during the coming winter season.

In replying, A. W. Manby, Assistant

(Continued on page 12)



REGISTRATION gathered at the Royal Edward Hotel, Fort William, for the annual convention of District No. 3, O.M.E.A., A. W. H. Taber (table, left) had a busy time looking after registration. Included in the first group to get their badges are J. E. Cole, J. L. Moran, J. R. Pattison, Albert Jennings, E. Persson, E. Major, W. Hambleton, J. W. Looney, J. N. Stanley and W. M. Hunter.

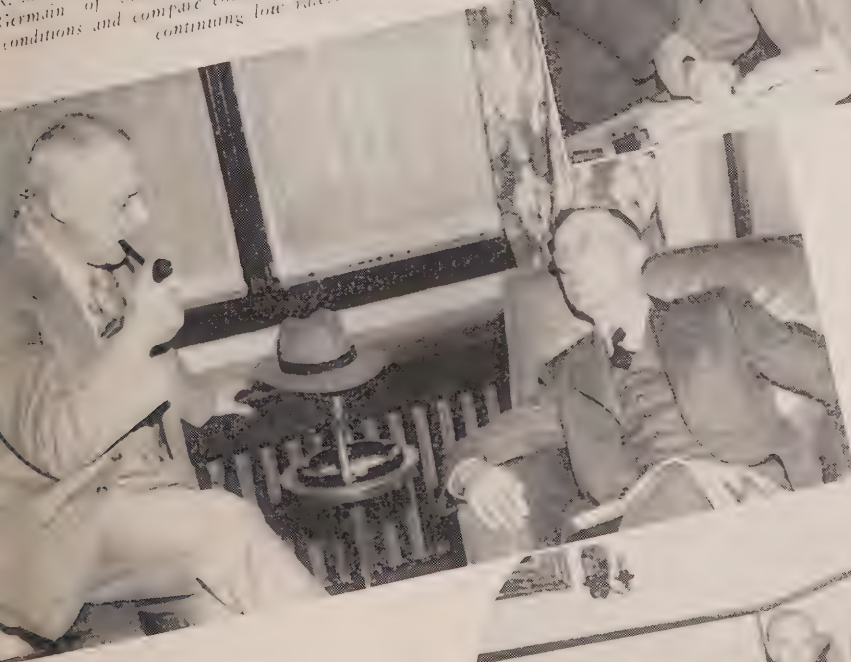
REGISTERING FOR a Hydro convention is as pleasant as signing an autograph. Sound business discussion but no bitter personal debates. Everyone is pulling for one objective—the best possible service to consumers. Left to right—A. W. H. Taber, Mayor Garfield Anderson of Fort William and M. J. McHenry look on while R. L. Hearn, general manager of H.E.P.C., "signs in."



THE COMMISSION'S Second Vice-Chairman, W. Ross Strike, K.C., (below) is recovering from a joke he has just heard, so R. G. Walsh, chairman of the Port Arthur Public Utilities Commission, steadies his hand, while A. W. Manby, R. B. Chandler, F. G. Lovelady and A. A. McCuaig await their turn to register.

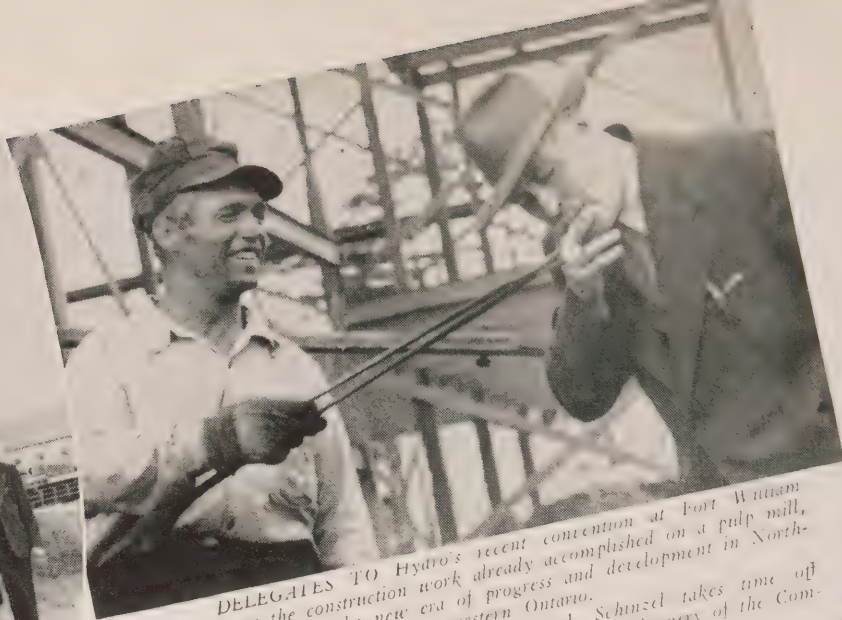


THE HAT on the radiator has started a discussion. R. M. Durnford, president of the O.M.E.A., and W. E. Germain of Sarnia consider the present economic conditions and compare commodity prices with Hydro's continuing low rates.



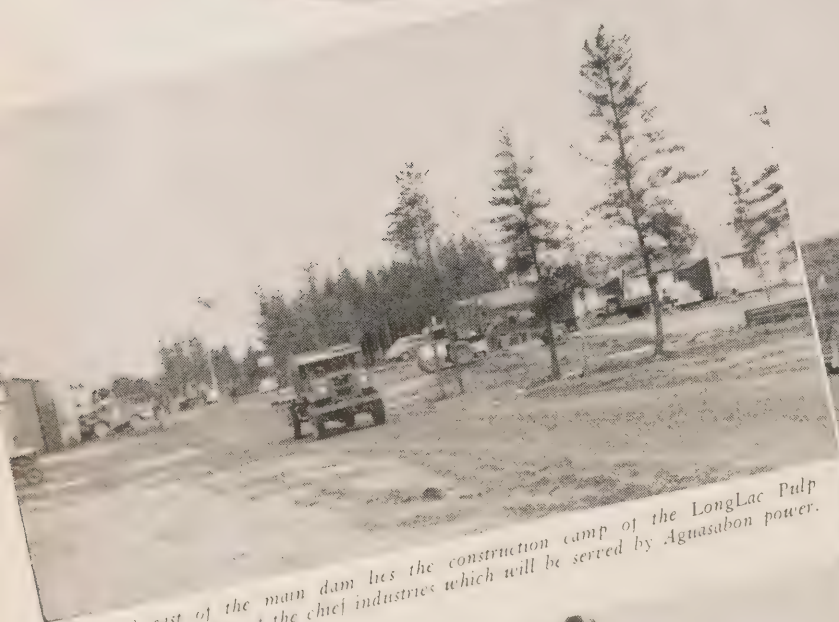
COMING OUT of a long morning session at which Hydro's chief problems were thoroughly discussed are (left to right) W. H. Hambleton, M. J. McHenry, Fort William's Mayor Anderson, W. Ross Strike, K.C., A. W. Manby, Hon. D. R. Michener, Hon. George H. Challies, E. Persson and J. R. Pattison. Behind this group are H. Moors, R. M. Durnford, A. W. H. Taber and R. L. Hearn





DELEGATES TO Hydro's recent convention at Fort William view the construction work already accomplished on a pulp mill, symbolic of the new era of progress and development in North-western Ontario.

USING HIS tongs as a lighter, A. Schinzel takes time off from throwing rivets to accommodate Dan. Flannery of the Commission staff.



TWO MILES east of the main dam lies the construction camp of the LongLac Pulp and Paper Company, one of the chief industries which will be served by Aguasabon power.



STRUCTURAL STEEL and scaffolding tower impressively against the skyline as the pulp mill which will give employment to hundreds of workers begins to take shape.

JUST A glance around a big pulp and paper mill under construction is suggestive of the forces that will be required to keep it functioning effectively when all its initial electrical equipment is installed.

WORKING ON the construction of the pilot shaft at the intake of the Aguasabon development. The shaft is being driven vertically through the rock to a depth of approximately 225 feet and will connect with a tunnel which will convey the water to the powerhouse.

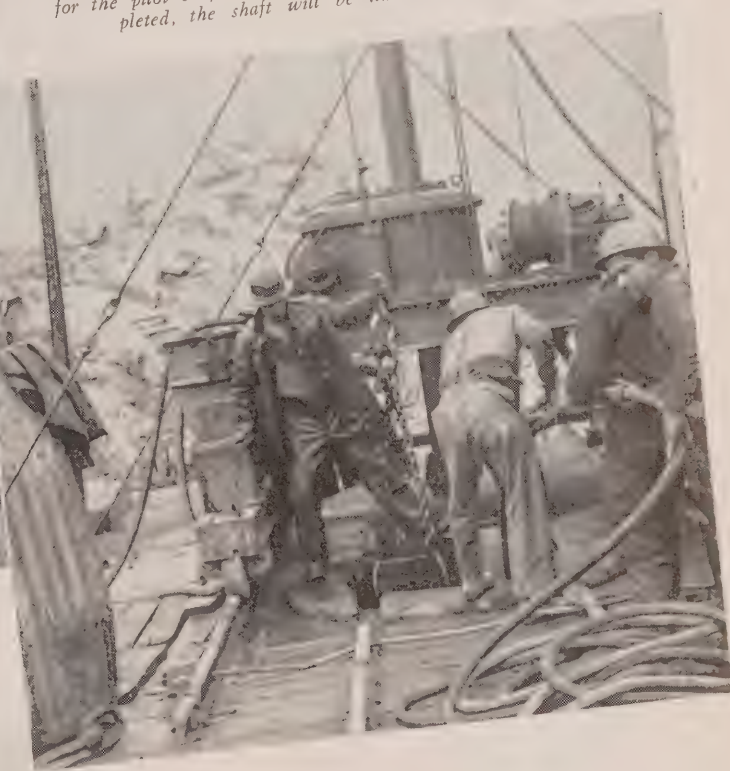
CONCRETE IS now being poured for the main dam—1,300 feet in length—which will span the Aguasabon river and divert flow through lakes and basins to the intake above the powerhouse site at Terrace Bay.



A CALYX drill (below) is sinking a cut four feet in diameter for the pilot shaft at the intake. When the boring is completed, the shaft will be lined with concrete.



LOOKING INTO the portal of the tunnel from the powerhouse excavation. Conveying the water from the intake to the penstocks, the tunnel will be some 3,500 feet in length and will be fitted with a surge tank to control and regulate flow.



TO EXPEDITE the work of construction, a Bailey bridge, reminiscent of the structures Canadian troops threw across the rivers of Holland and Germany, has been built across the diversion channel at the main dam.



UNPRECEDENTED DEMANDS

(Continued from page 8)

General Manager—Administration, said that having reference to the total estimated demand this year, they felt that they could just get by if they saved power. By next year when the Aguasabon plant came into service, they would have a little reserve of between 7,000 and 8,000 kilowatts. By 1950, Mr. Manby stated, additional capacity would be required.

In answer to further questions, he said that the Commission did not wish to introduce restrictions but they did wish the co-operation of everyone in helping save power.

Mr. Strike remarked that the Commission was watching the power supply situation like a doctor watching a patient who required attention.

R. B. Chandler, Manager of the Port Arthur Public Utilities Commission, asked what progress was being made so far as rural service in the Thunder Bay area was concerned.

M. J. McHenry, Director of the Consumer Service Division, stated that in 1946 close to seven miles of rural line were constructed and 23 new rural consumers added.

Among the delegates and guests in attendance at the District No. 3 Convention were: M. A. Grynol, L. Hebert and R. A. Taylor, Fort Frances; J. Phillips and A. A. McCuaig, Schreiber; W. Hambleton and E. Major, Dryden; John L. Moran and J. E. Cole, Sioux Lookout; E. Persson and N. M. Hunter, Emo; J. R. Pattison, Fort William; E. A. Vigars, Port Arthur; J. Fregeau and F. Greenslade, Kenora; William Schutte, Scobie Township; William Clarke, Longlac; A. G. Jennings, East York; J. N. Stanley, Commonwealth, Welland; L. B. Hulko, Manager, Thunder Bay Rural Districts, H.E.P.C., Port Arthur; J. W. Looney, System Operating Superintendent, H.E.P.C., Cameron Falls; D. T. Flannery, Municipal Engineer, H.E.P.C., Toronto; H. T. MacDonald, Municipal Accountant, H.E.P.C., Toronto; John V. Walters, Treasurer, H.E.P.C., Toronto; H. E. Harrison, Toronto.

GEORGIAN BAY CONVENTION

Making his first appearance before the delegates of District No. 2, O.M.E.A., as General Manager and Chief Engineer, R. L. Hearn stated that the total cost of engineering projects approved by the Commission now exceeded \$240,000,000.

Mr. Hearn said that it would be of course understood that the programme of capital expenditure extended over a period exceeding five years. Of the total involved, about \$180,000,000 was represented by work order amounts on active projects, of which about \$55,000,000 had

been expended to July 31 of this year.

To take care of the expanding programme, the General Manager stated, it had been necessary to make some major changes in the Commission's organization and add considerably to the staff. From November 1, 1945, the staff had been increased from 5,764 to 12,257. The regular staff had increased from 3,825 to 5,084 and the temporary staff, chiefly construction workers, had increased from 1,939 to 7,173.

In discussing and emphasizing the importance of electricity in daily life, Mr. Hearn said that it had been stated, and he thought it was true in a general way, that: "Horsepower per head is equivalent to wealth per head." In other words, continued Mr. Hearn, that country which used the greatest amount of power per head of population, would be the wealthiest, and its citizens would enjoy the highest standard of living, for the simple reason that it would employ a larger amount of mechanical equipment to assist the worker to produce the wealth of the nation. Kilowatt-hours consumed per capita, declared Mr. Hearn, was the master key to industrial productivity.

At this point, the General Manager compared the kilowatt-hour consumption per capita for various countries and cited the following figures for the year 1946: United States, 1,415; Canada, 2,863; and Ontario, 2,925. The figure for Great Britain, in the year 1945, was 690 kilowatt-hours per capita.

Measure Of Energy

Mr. Hearn wondered if they had ever stopped to consider what the term "kilowatt-hour" used by electrical people so frequently, meant in the language of the man on the street? Technically, of course, he stated, it was a measure of energy and was equal to 1000 watts used for an hour, or 500 watts used for two hours. He pointed out that 750 of these watts were the equivalent of one horsepower. The normal healthy working man, smiled Mr. Hearn, could average only $\frac{3}{4}$ of a kilowatt-hour per 8-hour day using his best sustained efforts. If he worked 300 working days a year his normal output of energy would be only 225 kilowatt-hours, which at one cent per kilowatt-hour would figure out to \$2.25 — not a very handsome annual wage! Furthermore, continued Mr. Hearn, the efficiency of the human as a machine was not very high when compared to that of an electric motor. To produce a kilowatt-hour by human workers at 65 cents an hour, for an 8-hour day, it would cost approximately \$7 per kilowatt-hour. Hence, it was affirmed that it was better to employ an electric motor wherever possible to do the work rather than a human being.

Continuing, Mr. Hearn said that in

Ontario, during 1946, 12 billion kilowatt-hours had been used for one purpose or another. If it were necessary to replace that energy by the human machine at $\frac{3}{4}$ kilowatt-hour per 8-hour day, it would require an additional 53,000,000 workers.

The speaker also pointed out that it would take one worker more than 30 hours to produce energy equivalent to that required to operate a 3 kilowatt-hour heater for one hour, and more than 7 hours to produce the energy required for a 600-watt appliance (such as an iron) operating for one hour.

"Hence," remarked Mr. Hearn, "we should have a healthy respect for our friend the kilowatt-hour; we should be careful not to waste it."

"The real material wealth of a nation lies in its production," he continued. "In by-gone days the material wealth of a man was assessed by the number of slaves he possessed. Similarly, we may now assess the wealth of a nation by the work capacity of its mechanical and electrical workers — in other words, by its electrical output and it, therefore, behooves us to employ our hydro-electric power assets in the most efficient ways; do not waste them, for large and great as they are, they are not unlimited."

Addressing the District No. 2 delegates, W. Ross Strike, K.C., Second Vice Chairman of the Commission, stated that Hydro's general policy in taking care of the accelerated demand this coming winter, was to try to distribute power resources in such a way as to reduce to a minimum any disturbance to the economy of the Province.

He went on to say that it was hoped that employment would be maintained at the highest possible peak and that arbitrary controls would be eliminated as much as possible because it was felt that the people of this Province wanted to live in a free economy. If emergencies did arise, he said, and it was quite probable that they would, it was felt that the Commission was in a position to take the necessary steps to effectively cope with the conditions as they arose.

Regional Office

Mr. Strike spoke briefly on the re-organization now taking place in the Commission, and pointed out that there would be nine regional offices and that the regional office for the Georgian Bay area would be located in Barrie, and that the geographic boundaries would be the same as at present.

Mr. Strike concluded his remarks with, "I have a motto that I try to live up to, and I will give it to you: think hard, work hard and keep your shirt on."

During the business session of the

(Continued on page 29)

PLANS IN PLASTER OF PARIS

By W. Ronald Mathieson,
Hydro News

A process evolved by a Toronto professor for making accurate three-dimensional maps in casts of plaster of Paris — a process which was used by the Allies during the war years—is now being used by Hydro in studying the terrain of new sites for developments and other important projects.

Behind these maps is a story of diligence, skilled craftsmen, secrecy and a desire to have a map which would be accurate and, at the same time, show three dimensions.

Most of us are familiar with the salt and flour maps made by school children and mounted either on cardboard or on a table top. These maps, coloured to show green water and brown land, had absolutely no degree of accuracy and served

only to familiarize one with the general contour of a country.

Professor K. B. Jackson, of the department of applied physics of the University of Toronto, probably had these crude maps in mind when he set about the task of determining whether or not these hand-made models could be produced on an accurate scale.

With the co-operation of military photographers a section of Camp Petawawa, which had been surveyed and studied in detail, was drawn to scale and the photographs served as a guide to the map makers.

Cut First In Plywood

In making the contour maps, a general outline of the designated area is cut out in plywood and to show height, laminated layers are added where necessary. The

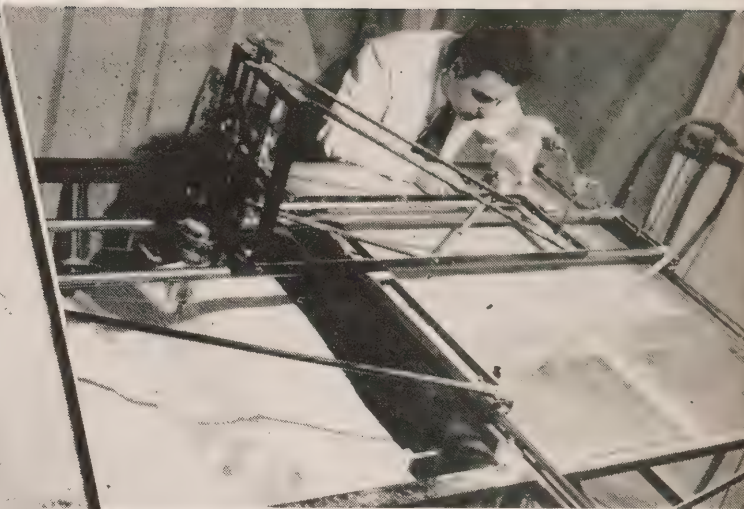
actual building-up process, however, is done in a backward manner, the plywood being the exact opposite of the site, or in other words, it would be known as a negative. This negative of wood is then placed in a box and plaster of Paris poured over it so that when the mould is set and inverted and the negative removed the result is much the same as that of a student's hand-modelled project.

The next process the plaster cast undergoes is that of cutting down the hills and valleys to scale. Now the reason for showing the contours in wood can be understood. An outline has been made and the amount of cutting has been decreased. To accomplish this routing, Professor Jackson fell back upon an elementary principle of a pantograph.

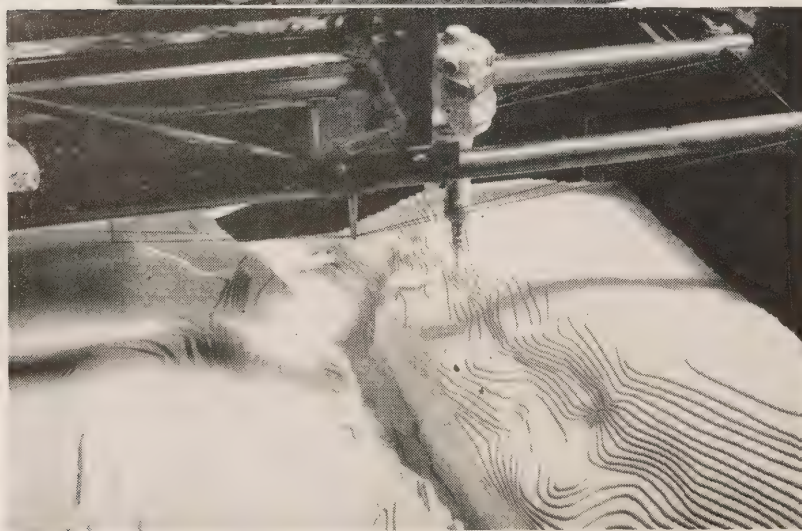
This pantograph is the machine or instrument which is used for duplicating handwriting, tracings or drawings and is



IN THE front lobby of the H.E.P.C. administration building, two interested young ladies pause to look over the plaster of Paris, three-dimensional map of the Barrett Chute development. This particular map shows transmission lines and various buildings at the development, and to make it more pleasing to the eye, colour has been added.



IF YOU look closely at the upper right hand corner of the map just above where K. B. Jackson, professor of applied physics, University of Toronto, is pointing you will notice that it is a facsimile of the Normandy Beaches and the Falaise Pocket which were the scenes of decisive battles during World War II. The operator (above) is Raymond Phelps of the H.E.P.C. promotion department, who, early in the war decided to devote every spare minute he had to helping Professor Jackson in his important work. In this picture you can see the two arms of the machine which operate on a pantograph principle. In the lower picture is a close-up of the arm which controls the router or drill. Note the contour cuttings which give a map the three dimensional proportions that Hydro engineers are finding so useful in planning operations and construction work.



like an extension arm on a pencil or two pencils joined together so that where one moves the other follows. In making these maps, however, one arm has an electric drill to cut away the plaster and is guided by the other arm which is manipulated by an operator who traces lines on the prepared map which has been made up from the photographs and surveys and now shows contours as well as length and width.

Sitting in front of the map with the lines on it, the operator first begins by

moving the tracing arm over the areas of the highest elevation. To use a hypothetical case, if the highest altitude were 1,000 feet, he would cut away everything in the plaster between this and the 975-foot level leaving the peaks showing. Then he would do the next level which might be the 975 foot and cut away the plaster which would leave the level between the 950 and the 975-foot levels showing. Thus by these stages every hill and knoll becomes defined in the plaster model. For Hydro purposes, the scales are usually 200

to 400 feet to the inch so that it can be realized that only small sections of a large area can be made up at one time.

That the drill may operate without any of the plaster dust fouling it or obscuring the vision of the operator, a vacuum nozzle placed directly over the drill, sucks away any powder or chips that might otherwise get in the way or make the whole room look like a chopping mill.

War Use

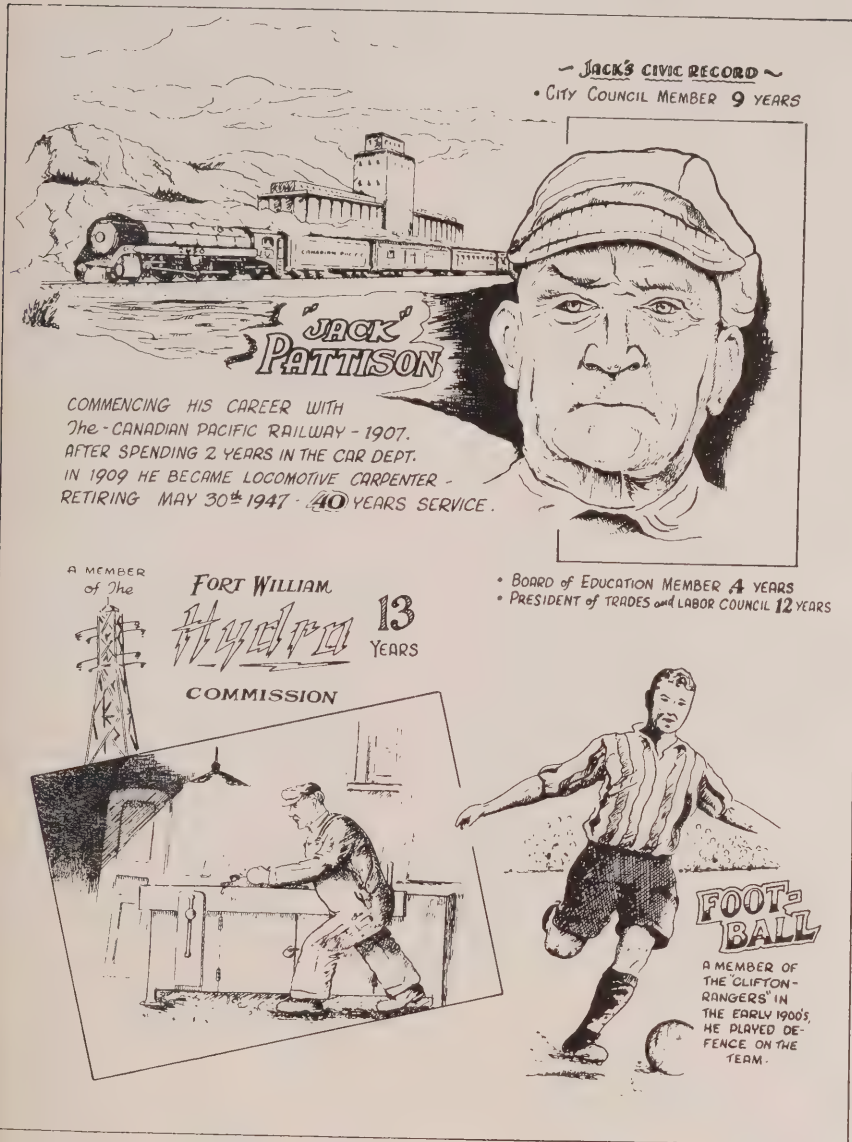
After the invasions had been started on the coast of Normandy during World War II, Professor Jackson accepted a commission from the military personnel, who were directing operations, to put the country on contour maps so that it could be readily studied for combat movements.

Sections of Italy were also mapped to scale and if the war in the East had not "folded up" when it did, certain districts would probably have been considered for study by Professor Jackson.

When Raymond Phelps, of Hydro's promotion department, was approached to help early in the war, he decided right

(Continued on next page)

CHARACTER SKETCH OF JACK PATTISON



THIS CHARACTER sketch (reproduced above) of J. R. (Jack) Pattison, Commissioner of the Fort William Hydro-Electric Commission, speaks for itself. Jack happened to have this testimonial with him when he was chatting to Hydro News at the District No. 3 O.M.E.A. convention. It was presented to this active on-the-job Hydro Commissioner when he retired this year following 40 years' service with the Canadian Pacific Railways. His many friends in Hydro circles will, no doubt, be interested in this unique sketch which portrays Jack's versatility and activities.

PLANS IN PLASTER

(Continued from previous page)

then and there that he would devote several evenings a week to expediting Professor Jackson's commission. Mr. Phelps, who is a "natural" as far as handicrafts are concerned became an operator, and on his own time completed many of the contour maps.

Used By Hydro

With the end of the war and Hydro's new developments getting underway at Stewartville, Desjoechims and Aguasabon, the Commission decided to use the plaster models for technical and educational work and so made the necessary arrangements with the University of Toronto. One plaster model depicting the Barrett Chute power development was produced and has been exhibited around the Province, and for some time was on display in the lobby of the H.E.P.C. administration building.

Others have been produced for technical study and are located in the Commission's hydraulic department where the engineers can get a picture of their problem in miniature which helps to make their work a little easier.

Just in case additional models of the same project are required, a cast is made of the finished mould by pouring a mixture of gelatine and glue into the plaster. The impression formed is then peeled or rolled off and, in turn, placed in a box. A duplicate map is made by pouring plaster over this impression.

In so far as Commission engineers are concerned, these contour maps have presented a new approach to their problems. A visual approach, which at a glance, sums up the terrain and tells the story of what excavation is necessary and what natural obstacles must be overcome before a Hydro project can be built.

ANNUAL BRIDGE

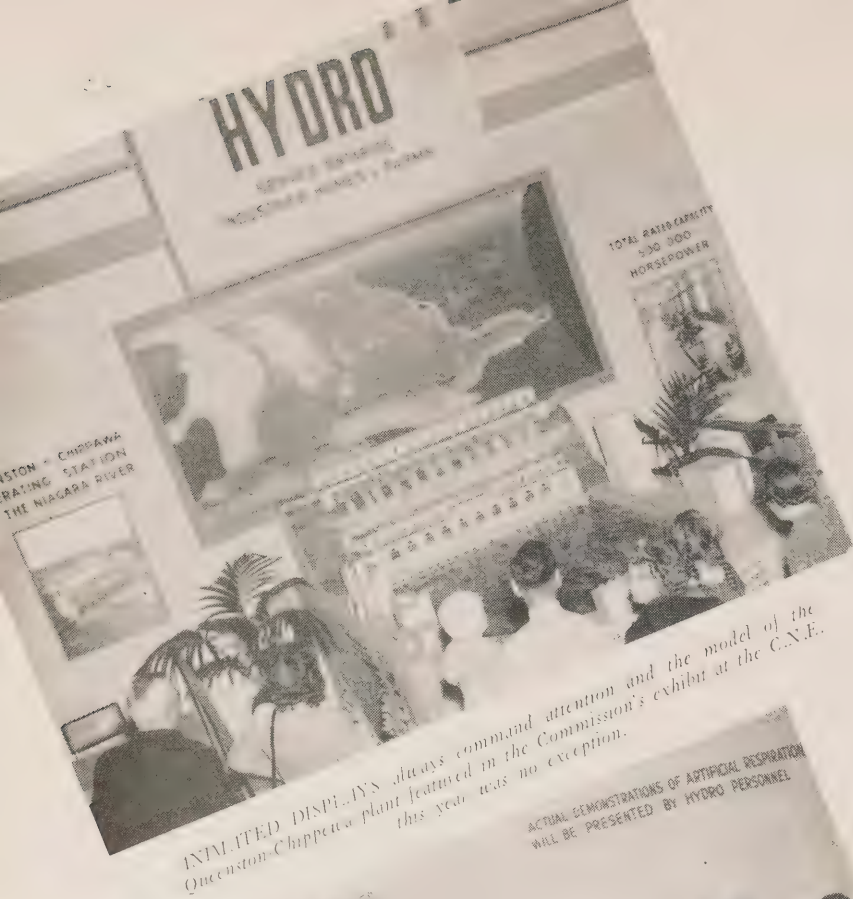
Sponsored by the Ontario Hydro-Electric Club, this year's ladies' bridge will take place at Sherbourne House Club, 439 Sherbourne Street, Toronto, on Saturday afternoon, November 8. Zaida Cummings, convener, has announced that there will be table prizes as well as lucky draw prizes, and refreshments will be served during the afternoon.

Other members of the committee are: Jean Wilson, Treasurer; Margaret Jeffery, Secretary; Gladys Lavery, Robin Adair, Margaret Gahagan, Bruce Irvine, Mignon Hochberg, Helen Janetakes, Norma Walker, Emily Janson, J. Allin, Phyllis McFadden, Wanda Butts, Rhoda Browne and Margaret Robertson.

NEW ISSUE OF CANADA SAVINGS BONDS NOW ON SALE: INTEREST 2 3/4 PER CENT

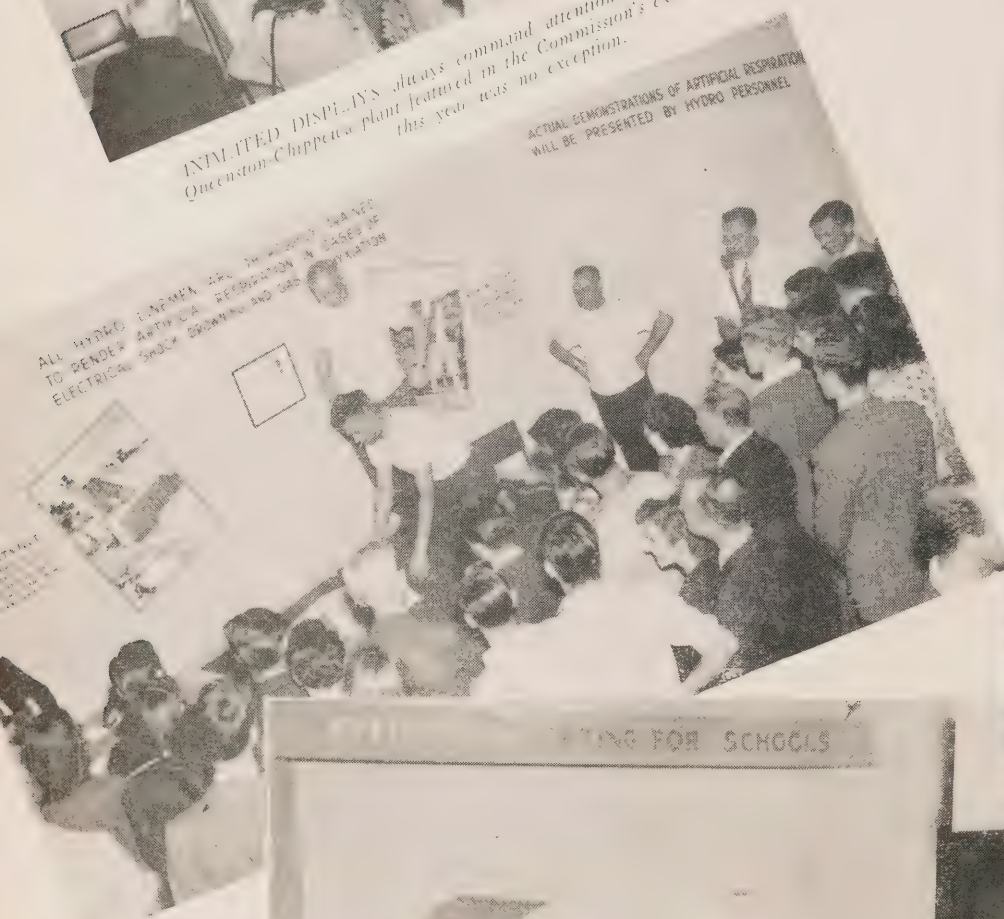
ANOTHER OPPORTUNITY is being afforded this fall of subscribing to Canada Savings Bonds. The new issue, placed on sale October 14, will bear interest at the rate of 2 3/4% per annum over a period of ten years. Bonds may be redeemed at any time at any bank in Canada for full face value plus accrued interest and will be registered in the owner's name,

thus affording protection against theft or loss. Not more than \$1,000 of the new series may, however, be registered in any one name. The offering of this second series is said to have been prompted by the reception given to the first Canada Savings Bonds last autumn when more than one million Canadians subscribed.



WHEN THE jaws of the hydraulic ram almost feel the tenseness of the crowd in to the public how every new batch of Hydro

HYDRO



SYMBOLIC of the world's la is a familiar sight on po

A DEMONSTRATION in art members of the Commission st

JAMES A. BLAY, the Comm directors of the Canadian N visited the Hydro

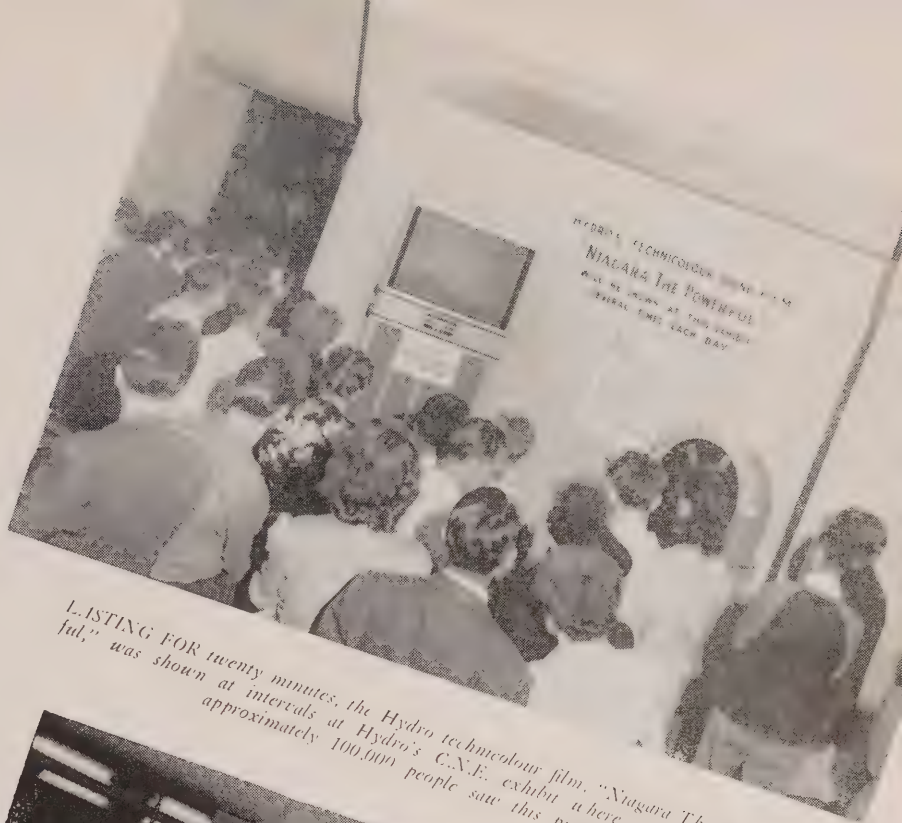
TO MANY visitors to the Com esting features was a miniat animation, the importance of Reid of the Commis

THE IMPRESSIVE entrance t through these porta

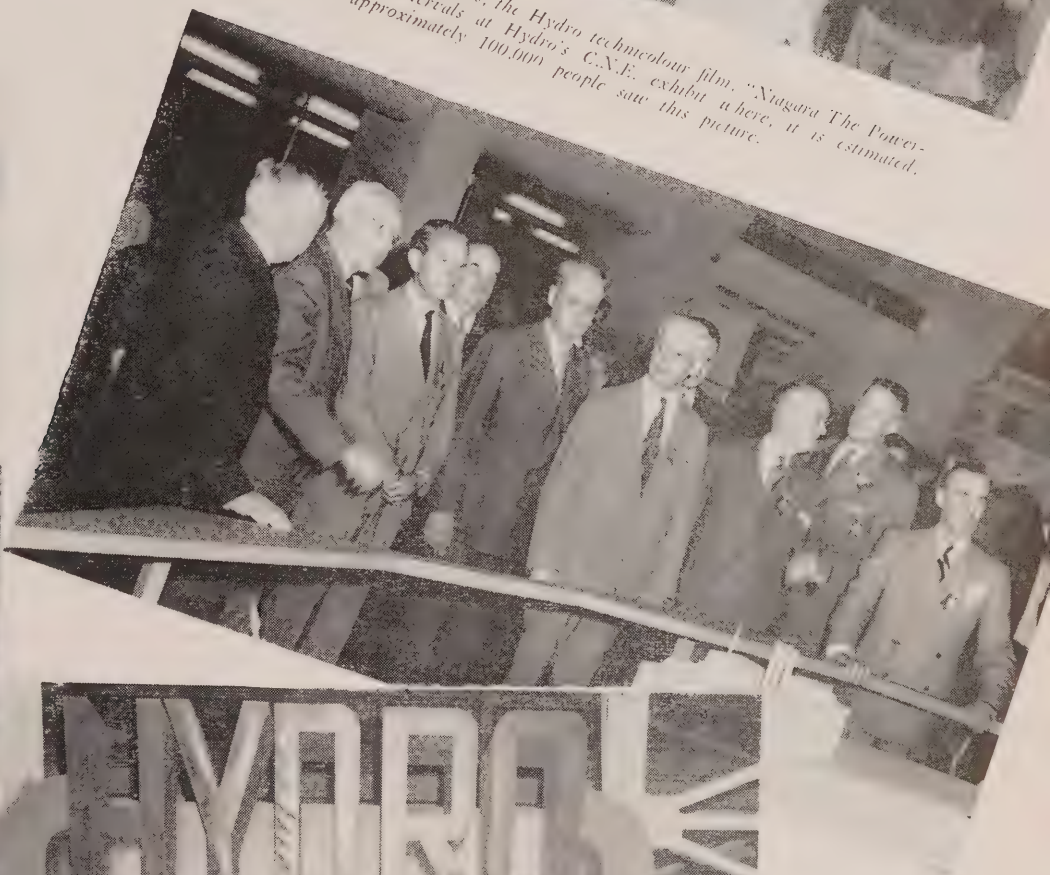


the cylinder of concrete you could
pose of this display was to illustrate
before it is used in construction work.

C.N.E.



LASTING FOR twenty minutes, the Hydro technicolour film, "Niagara The Power-
ful," was shown at intervals at Hydro's C.N.E. exhibit where, it is estimated,
approximately 100,000 people saw this picture.



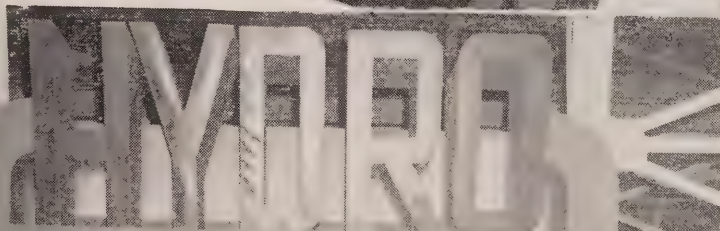
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HYDRO POWER PACES ATLAS

By Harry M. Blake,

Hydro News

Covering fifty acres of ground on the outskirts of Welland, Ontario, Atlas Steels enjoys the reputation of being one of the biggest and best equipped plants of its kind in the British Empire. Here are turned out high quality specialty steels and the types of highly-tempered steels which are fashioned into precision tools for use in every type of industry. In the making of such steels under modern methods of high-speed production, electricity is indispensable, and, in the case of Atlas, as in that of other basic industries, Hydro is endeavouring to co-operate on a scale that will ensure an increasingly available supply of material that is in urgent demand every where.

In an industry so dependent upon electricity as Atlas production growth can be

fairly well shown by the power loads supplied. In 1928, when through the vision and initiative of its present president, R. H. Davis, Atlas was first placed in a position to make high-grade steels, average loads of about 2,000 horsepower were called for. By 1939 the average load demands had risen to 6,800 horsepower. In 1945, the last of the war years, the total average load supplied was in the neighbourhood of 49,500 horsepower. Today it is in excess of 54,000 horsepower.

Let us examine the picture a little closer in order to get a better idea of the post-war demand for high-quality steels.

During the war about 95 per cent of Atlas production was devoted to armament. Atlas was called upon to make guns. Starting off in 1941 with 45 gun barrels per month, by 1943 its production had risen to the remarkable figure of 4,500 per month. Atlas shaped, bored and did everything but tool and

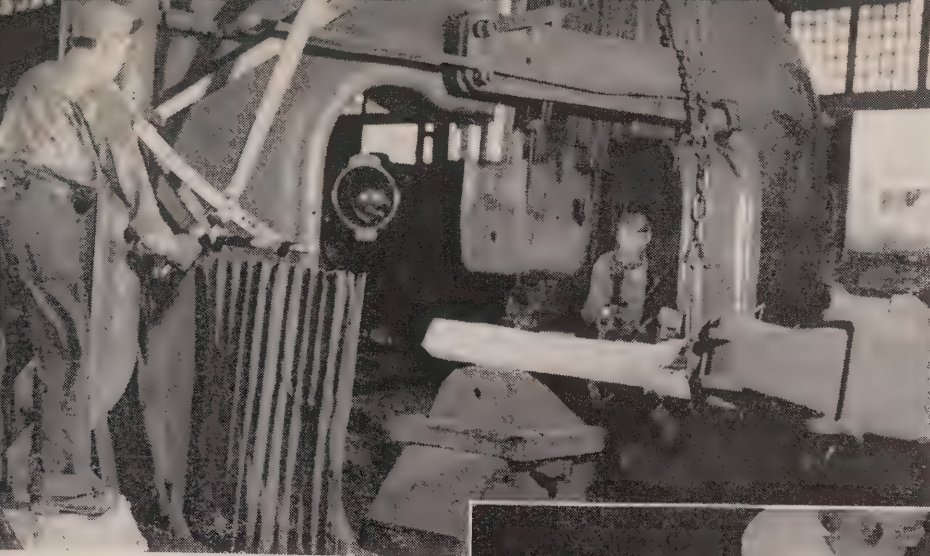
finish. It worked on many types of small calibre guns used by the British and Canadian armed forces. It even made Bazooka guns for the United States army. Armour-piercing steels and bullets were also turned out. When the war came to an end the "beating of guns into plowshares" was an easy transition, since much the same equipment is required for its peacetime production as was demanded for the making of weapons. It was well that it was so.

In the ten-year period between 1929 and 1939, production at Atlas had increased about 300 per cent. As practically no steel had gone into normal channels during the war, there was, by 1945, a formidable back-log to pick-up. There was also a brisk upward surge in new demand for special steels. Three shifts a day representing a total of 1,800 employees, are now working in an en-

(Continued on page 20)



SWING GRINDERS are frequently employed in cleaning and conditioning the special billets turned out by Atlas Steel. These grinders are driven by electric motors and are operated at very high speeds. All that the operator has to do is to guide them. Hydro power does the rest.



DURING THE war Atlas Steels turned out guns of various calibres for the British and Canadian armed forces. In 1943 the remarkable production figure of 4,500 gun barrels per month was reached. At Atlas mills all but the tooling and finishing was carried out. Here one of the mammoth 1,000-ton presses is engaged in the forging of a weapon which perhaps gave the coup-de-grace to some Nazi raider on the high seas.

HOT SCARFING is a method of conditioning plain carbon and low alloy tonnage steels during the "bloom" stage. Men engaged at this job wear visor helmets and are otherwise protected against the spitting steel. Safety of the workers is a first consideration in modern industry, and where men follow regulations, there are reported to be few accidents or casualties.



JUST AS you add milk to a "boil" of maple syrup to purify it, so the steel men add slag mix to a furnace "melt." The mix helps to bring unwanted particles in the molten mass to the surface where they can be conveniently skimmed off before the furnace is tapped. The door is opened just wide enough for the shovellers to operate without getting a fiery blast in their faces.



SAMPLES OF the furnace melt are taken from time to time for testing. These enable the electric heat loads and the refining processes to be regulated so that only material of the highest quality is delivered by the furnaces. The three men wear glasses designed to protect their eyes both against the possible "sparking" of the liquid metal and its blinding glare.

deavour to catch up with back orders and to execute the more urgent new ones as speedily as possible.

With all its melt furnaces going full blast and its mill presenting a scene of round-the-clock activity, Atlas is shipping between 12,000,000 and 16,000,000 pounds of steel a month, just enough to take care of 5,000 orders a month from various manufacturers. About 65 per cent of its production is taken by the home market. The remaining 35 per cent is export business. From an economic point of view, Atlas is, therefore, contributing first and primarily to domestic needs and secondly, but not less impressively, to the requirements for world recovery.

In order that some idea might be gained of the extent and importance of

the work being carried out by Atlas and its various uses of electric power, Hydro News was invited to make a tour of the premises, accompanied by T. H. Nolan, the plant's electrical engineer.

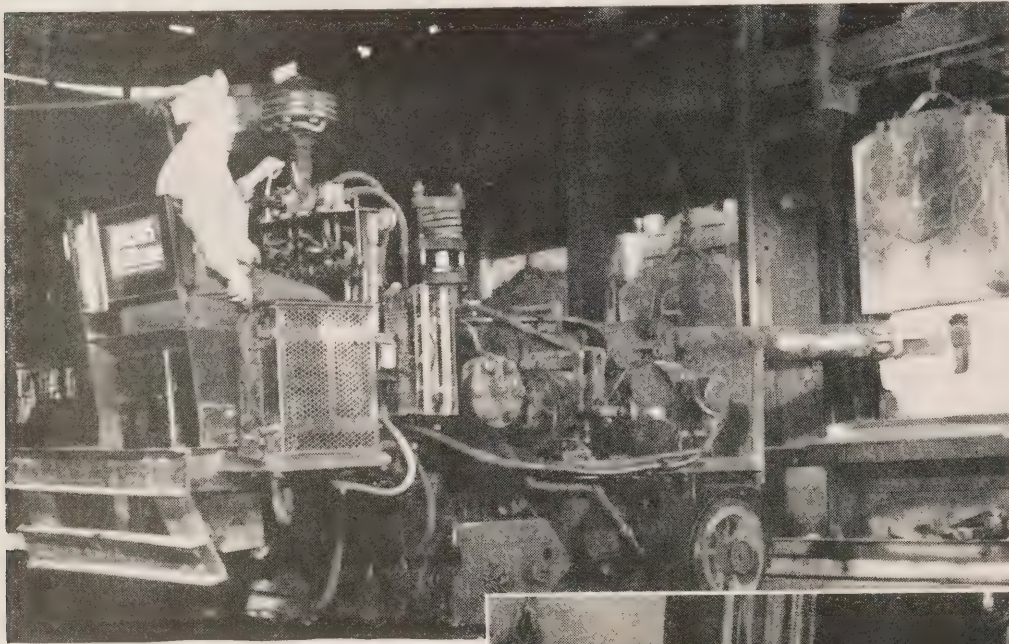
Tremendous Expansion

Atlas is supplied with Hydro power through both the No. 2 municipal substation at Welland and through a transformer station set up by the Commission to the east of the plant during the period of tremendous war-time expansion. Power comes into the Commission's own station over 110,000 volt high tension lines and is stepped down to 26,400 volts for transmission by underground cables to the company's own transformer station or power room in the melting furnace and blooming mill section of the plant. Here it is again stepped down to

convenient voltages for heat operations and other purposes. Power is brought to the Welland station at 26,400 volts and passed on to the mill section of the Atlas plant at 4,000 volts. Transformers in the plant step it down to the required voltage — usually 220 volts — for mill operations.

The fine steels produced at Atlas are derived through the melting, refinement and scientific treatment of scrap steel. Everything from discarded locomotive wheels and boilers to the smallest piece of worn-out steel or part steel equipment is used. The huge scrap piles which cover several acres of ground are being continually diminished and continually renewed. "Atlas" processes in the furnaces — where nobody can see what is

(Continued on next page)



DRIVEN BY a 35 horsepower motor, the manipulator is charging one of the six electric heat furnaces at Atlas Steels. These huge "melting ovens" can handle 30 tons of scrap steel at one time and are lined with resistant fire bricks some of which cost as much as five dollars apiece. Hydro power, regulated to the proper voltage, is brought in by cables to the electrodes which contact the load with a 60,000-ampere current.

A TEST piece is being cut from a steel forging by an electrically driven circular cold saw. Steels are forged as well as "bloomed" in different sizes and shapes. Samples are subjected to many tests and analyses to ensure that the product is "right" both with respect to material quality and consumer specifications before it is shipped. The Atlas laboratory is a little industry in itself.



HYDRO POWER PACES ATLAS

(Continued from previous page)

going on because of the intense heat—are calculated to destroy unwanted alloys and to substitute others which give the required temper and consistency to the steel in its molten state.

Powered By 35-Horsepower Motor

Passing from the scrap miles through nearly half a mile of covered shed where overhead cranes, and cars were moving material from one workshop to another, Hydro News reached the meltshop where one of the six furnaces was being recharged. The "charger", powered by a 35-horsepower motor, had thrust the last box of scrap into the furnace—it has a capacity of 30 tons — and was being swung to one side by a powerful overhead electric crane. Through the partly-raised door of the "melting pot" we caught glimpses of the brick lining still glowing from its contact with the molten metal which had recently been poured.

"Some of those bricks cost \$5.00 apiece," Mr. Nolan told us. "They withstand very high temperatures."

Current Of 60,000 Amperes

Overhead and to one side of the furnace there was a ripple and sway among the cables which bring in the electric load. Suddenly from the furnace came a flash of incandescence. More flashes and a crackling roar as a jagged corona of fire swept around the top of the furnace. The electrodes were contacting the furnace load with a current of 60,000 amperes. In about three minutes, as the resistance to the electric heat load was overcome, the crackling subsided, and once more, controlled by Atlas engineers, Hydro power went smoothly to work.

Ladles Are Flame-Dried

In about eight hours' time there would be another pouring from the furnace. Mr. Nolan showed us one of the great ladles into which the metal is poured being flame-dried, and pointed out that this was a very necessary procedure. Any moisture would make the "melt" spurt up like a miniature volcano. Before pouring, the slag, consisting of the impurities, which have risen to the surface in the melting process, is removed. The molten metal is transferred from the ladles to forms which shape it into billets. After cooling off, the billets are placed in a soaking pit where, under applied heat, they are brought to the temperature required for rolling them in the blooming mills. Hot saws, powered by 250 horsepower motors, are used to cut the blooms.

Not all the billets are sent to the blooming mill. Some of them are forged under the impressive strokes of a 300-ton

hammer. The anvil for this mammoth equipment has a foundation on rock 90 feet below the flooring. Another interesting piece of equipment is the 750-ton ampulidone-controlled shears which cuts through a billet of steel like a knife through butter. This equipment is operated by two 250-horsepower motors.

Many Milling Processes

In addition to the primary operations described there are a vast number of milling processes involved in the preparation of Atlas steels to meet the varied requirements of its many customers. These include the mining industry in South Africa and South America as well as in Canada, the automobile industry, the plastic industry, manufacturers of textiles, rubber and glass, the oil industry and practically every type of manufacturer who requires tool steel or special steel for the moving parts of machinery. Steels are finished in a wide variety of sizes and shapes. The size varies from 1-16th of an inch in diameter to 14 inches or even more. Atlas steels are marketed in slabs, squares, rounds or in special shapes. Die steels are among the most important specialties produced.

Installation Of 2,000 Motors

For the carrying out of all this work under the pressure of increased customer demand there is now an installation of 2,000 electric motors and these rate from

1-50th of a horsepower to 1,750 horsepower. A good many of these motors operate on direct current which is produced by Atlas generators from the power which Hydro supplies.

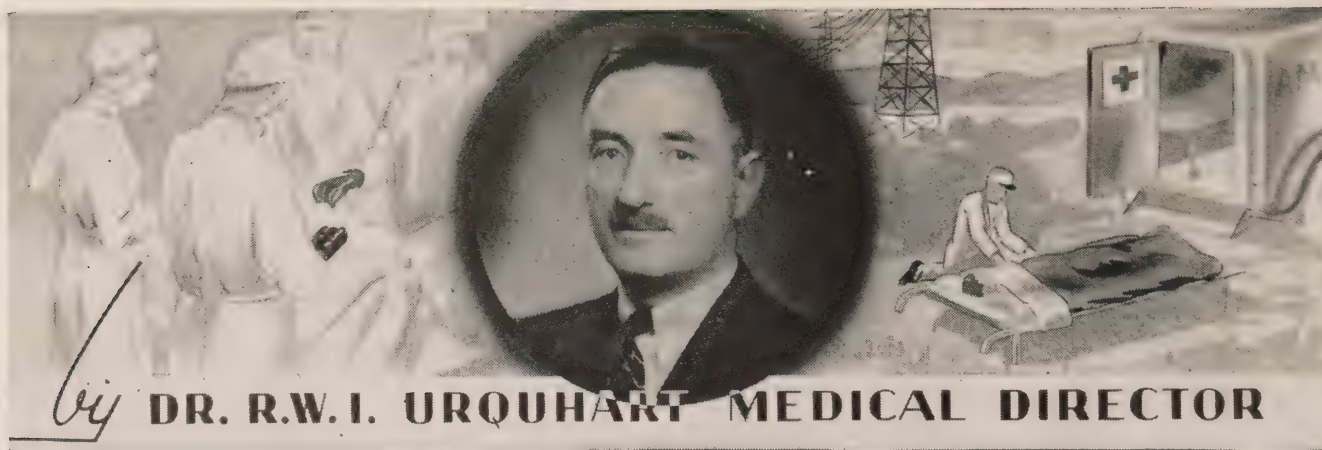
Apart from the electrical installations provided to distribute, regulate and control the Hydro power loads, perhaps one of the most striking features to a visitor is the care that is taken to see that Atlas steels are "right" before they go out of the plant. There are between 270 and 300 different analyses of the steel that comes out of Atlas furnaces. The equipment and men employed on this laboratory work would constitute a little industry in itself.

Help Rehabilitation

As Gilbert Soler, the works manager of Atlas put it: "We are shipping steels not only to Ontario and other Canadian customers but to organizations and firms all over the world. And we want to keep on shipping. Apart from our natural interest in Atlas and Canada, we like to feel that we are doing something to help the rehabilitation of world industry on a peacetime basis. Never once during the long years of the war did we fail in deliveries of the armament we were called upon to supply within a specified time. Our greatest hope is that we shall be able to catch up on the back-log of production which the war left us and be able to give the same sort of timely service to our normal peace-time customers both here and abroad."



HYDRO POWER is brought into the furnace and blooming mill section of Atlas Steels at 26,400 volts. In the power room of the plant it is further stepped down to convenient operating voltages. Here an operator is adjusting the electric controls governing the heat load in an electric furnace.



ALLERGY

"Your blood is overheated" used to be a favourite expression in grandmother's day when someone in the family developed the itchy skin commonly called "hives." This was followed by a course of sulphur and molasses, or perhaps a mixture of cream of tartar and Epsom salts. In due course the irritation disappeared and grandmother's reputation for infallibility in homely diagnosis and treatment became greatly enhanced.

As a matter of fact, grandmother was pretty shrewd. Throughout the years she had learned that certain foods disagreed with certain individuals. Tommy, for example, could not take his oatmeal in the warm weather. He broke out in hives. The oatmeal was discontinued but the unfortunate boy had to take the time-honoured mixtures to cool his blood. Of course, this was unnecessary because grandmother's ideas as to the mechanism of the condition were wrong, and if the truth were known, the Doctors of that day had little better to offer. Remember that grandmother could just recall the time when the family Doctor regarded "bleeding" as the sovereign remedy for most ills.

What then is the modern view of this condition? It is all summed up in a conception of what is known as allergy. Many people are allergic or sensitive to certain substances. This sensitivity is usually a family characteristic or disease and is transmitted from one generation to another, just as blue eyes or brown hair is transmitted. The sensitive person develops a defense mechanism against the particular foreign substance to which he is sensitive. This is known as "antibody" formation. These antibodies attack the "foreign" substance when it again appears. As a result, a reaction develops which may take the form of hayfever or asthma or hives.

The foreign substances to which people may be sensitive are innumerable and a complete list would fill several columns of the Hydro News. However, mention

might be made of some of the most common.

Typical hayfever or asthma reactions are produced by the pollens of trees, flowers or grasses. Tree and grass pollens are responsible for much of the hayfever in the spring, while pollens from the rag weed group account for many of the fall attacks. Many people can anticipate almost to the day, the date of onset of their hayfever attacks. This date corresponds with the first blowing of the particular offending plant. All of these pollens are light and may be carried great distances by the wind. The unfortunate victim is hard put to find areas free from pollen.

Many foods can cause trouble. Food sensitivity usually results in the hive type of reaction. The individual is fortunate if the particular food to which he is sensitive can be eliminated readily from his diet. Thus such foods as strawberries, tomatoes, peas, cheese and chocolate, to mention only a few, need not cause trouble. They can be avoided. It is a different matter when basic foods such as wheat, flour, milk, eggs, meat, etc. are responsible, because it is much more difficult to do without them. The process of cooking often alters the offending constituent in the food so that it becomes distinctly less harmful. As a result, many people throughout the years lose their sensitivity due to the ingestion of this partially altered substance.

Another group of offending agents are the external irritants such as dog hair, cat hair, rabbit fur, chicken or goose feathers, horse dander, etc. Many people cannot have a dog or cat in the house because of their sensitivity to the hair or dander of these animals. Many an auto trip has been ruined for a sensitive person by the presence of the family pet in the close confinement of the car. Nocturnal asthma, or hayfever, suffered by some is due to sensitivity to dust from the feathers in pillows. Replacement of the pillows with kapok may afford much needed relief. The fur of rabbits and

other animals occasionally cause trouble—not a few new fur neck pieces and coats have had to be returned because the wearer was sensitive to the particular fur or its dye.

Women in particular seem to be afflicted with this condition. Perhaps because they use so many toiletries which, in spite of the care of the manufacturers, sometimes contain allergic substances. Thus soaps, perfumes, face powder, face creams, nail polish, etc. have all at one time or other been found guilty. Every doctor has his stories of allergy which would be funny were they not so serious. For instance, the wife who complained that she could not get her husband to take a bath because he always suffered so much from skin irritation afterwards; or the husband who suffered dreadfully from asthma until his wife changed her brand of face powder.

The physician dealing with allergy must become a detective, neglecting no clue, however small, in order to trace down the offending substance. He is helped sometimes by the laboratory where skin sensitization tests can be done. Positive skin reactions are obtained with substances to which the patient is sensitive. Where these are many, treatment becomes somewhat of a problem, but where they are few, a series of injections can be given to render the patient less sensitive.

Temporary relief is now available in some of the newer drugs of which benadryl and pyrobenzamine are examples. Not all patients obtain relief with these drugs, and in some, they produce definite side-reactions which render their use inadvisable. For these reasons, they should only be taken as advised by a physician.

Research into this whole problem is continuing. It may not be long before our present conception of allergy may be as antiquated as grandmother's. If increased knowledge means certain cure, millions of sufferers will join me in looking forward to that day.

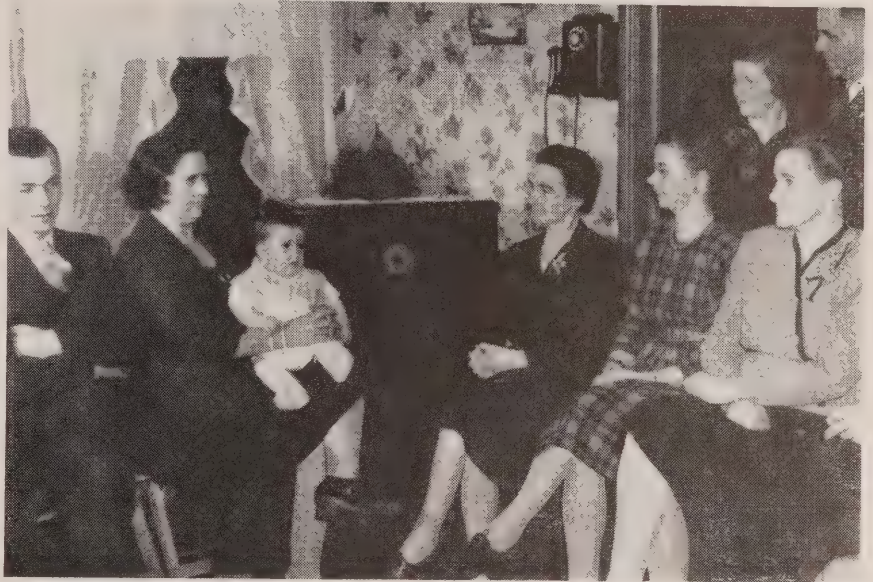
AIRING FARM TOPICS FROM COAST TO COAST

**National Farm Radio Forum Has
Audience Of 19,000 Farm
Folk - Tentative Topics
For This Winter
Announced**

**By Mildred C. Redmond,
Hydro News**

Each Monday night throughout the winter season, from the coast of British Columbia to the shores of the Maritimes, some nineteen thousand farm people lay aside their work to gather into listening-and-discussion groups that deal with subjects closely related to their specific problems. The National Farm Radio Forum is literally the voice of Canadian farming people and each succeeding year amply fulfills its purpose which is threefold: to strengthen the spirit of neighbourliness in rural communities, to help farm people to learn to work together more effectively in solving their problems and to promote better understanding among the people of Canada.

The Farm Radio Forum is a combination of the following features—first, the weekly radio broadcast on the CBC national network. This is usually in the form of a discussion by three or more



EACH MONDAY night through the winter season, some 19,000 farm people all over Canada gather in small groups to listen-in to and then discuss some topic of interest to themselves. This photograph was taken during a group discussion in Durham county, Ontario.

people, although sometimes they are dramatized. Second, the provincial news-

cast made by the Forum's provincial secretary on a provincial network during the last five minutes of the weekly broadcast. Third, printed study materials on the topic of the broadcast prepared in advance and distributed to the forums. Fourth, the group discussion by the forums on the subject of the broadcast immediately following the broadcast and fifth, the subsequent action of the forums which includes sending in a report of conclusions reached during the discussion and the sponsoring of projects of value to the local communities.

A Gradual Development

This popular feature did not spring into existence full-grown; it was, rather, a gradual development with roots from many different sources, especially, in already-existing educational groups. Heads of adult education in this country together with certain C.B.C. officials who were particularly interested in the educational aspect of the radio, got together and decided to experiment with localized discussion groups tied in with radio addresses. They felt that farmers, as a group, in particular needed encourage-



WHILE FARM groups all across the country gather to listen, CBC conducts the first part of each Farm Radio Forum. This particular broadcasting group includes Professor Ruhnke, O.A.C. and Dr. P. O. Ripley.

AIRING FARM TOPICS

(Continued from previous page)

ment after long depression years, and in the spring of 1940 an experimental series of broadcasts were organized. This series was called Community Clinic and was directed to listening groups among farm people in the Eastern Townships of Quebec. The broadcasts were dramatized discussions and the groups were invited to send in comments.

Farm Radio Forum first went on the air in January, 1941, on an Eastern network. That fall it became national. The idea of Forum Findings and the Provincial 5-minute news broadcasts were evolved to provide the two-way communication which had been lacking in Community Clinic. The broadcasts of the first two seasons were like a radio play in which certain characters met weekly at Sunny Ridge Farm to discuss the Farm Forum topics. In 1942 these drama-

pays the broadcasting participants. Provincially, the forum is supported in various ways, by assistance from farm organizations, Departments of Agriculture and Education, and University Extension Departments, and sometimes by voluntary collections or fees from the Forums.

The general policy of Farm Forum is established by a national board on which are representatives from each of the sponsoring organizations. This board bases its policy and decisions on the will of the forums as expressed by them in Forum Findings, that is the written report sent in following their own discussions, in replies to questionnaires, correspondence, resolutions and above all, on recommendations made at the annual National Farm Forum Conference.

It is felt that the broadcast itself serves several purposes. It focuses attention on the subject of the evening and presents informed points of view. It provides timely, pertinent information on the subject and also in spite of vast distances in this country, it gives farmers a feeling of unity with all other Canadian farmers. As one forum said in its report: "It has taught us that the people of Canada think much alike."

In Homes, Schools And Halls

The forums themselves, numbering last season 1,226, extend into every corner of the country. Depending on their individual size, they meet in homes, schools or community halls. After the broadcast, discussion and conclusions there is usually a pleasant hour of recreation with a sing-song, refreshments and neighbourly talk.

The whole idea of the National Farm Radio Forum is unique to Canada and is looked at with envy by farmers in other parts of the world. In no other country have the farmers their own nation-wide radio programme through which they can make wants and opinions known to the country as a whole.

The Hydro-Electric Power Commission is especially interested in the forums of this province since one of the subjects very much on the minds of all farmers right now is rural electrification. As can be seen from the list of subjects up for discussion this next season, electricity on the farm will be included in many of the general discussions.

TENTATIVE TOPICS 1947-48

NOVEMBER 3—YOUTH ON THE FARM

How can farming be made as attractive to young people as jobs and professions in the city?

NOVEMBER 10 — THE FARMER TAKES A WIFE

What part does the wife play in the farm enterprises? What con-

ditions make farm life as attractive to women as town life? How can farm women help bring these about?

NOVEMBER 17—A FARM ORGANIZATION FOR EVERYONE

What opportunities do young people and women want in farm organizations? Will they accept responsibility? Will they be given a chance to do so by senior farm organizations?

NOVEMBER 24 — WHAT THE FORUMS SAY

DECEMBER 1—WHAT'S NEW IN HEALTH

What developments have there been in rural health schemes in the past three years?

DECEMBER 8—THE TEACHER IN THE COMMUNITY

What part should the rural school teacher play in the affairs of the rural community? How can rural people help the teacher become part of the community rather than just a "transient?"

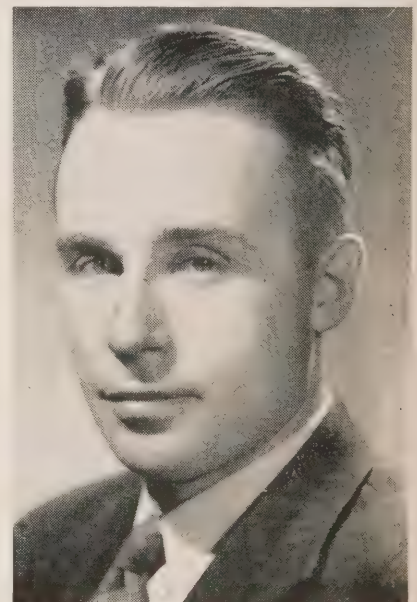


G. CLAUDE BURT,
Ontario Provincial Secretary of the Farm
Radio Forum.

tized broadcasts gave way to actual discussions between two or three people taking part in the broadcast.

Joint Sponsorship

Today the National Farm Radio Forum is sponsored jointly by three dominion wide organizations, the Canadian Association for Adult Education, the Canadian Federation of Agriculture and the Canadian Broadcasting Corporation. As far as financing is concerned, nationally, the forum receives grants from the first two of these sponsors. The third, the C.B.C., provides the time on the air and



JOSEPH GALWAY,
National Secretary of the Farm Radio
Forum.

DECEMBER 15—ORGANIZING FOR COMMUNITY ACTION

What distinguishes a live community from a dead one? How are community undertakings organized? Where can communities get information and help in their efforts to organize?

DECEMBER 22—WHAT THE FORUMS SAY

JANUARY 5—MARKETING BY CO-OP

Are co-operatives free enterprise? Is there any relationship between

(Continued on page 27)

PLANS COMPLETED FOR "YOUR HYDRO NIGHT"

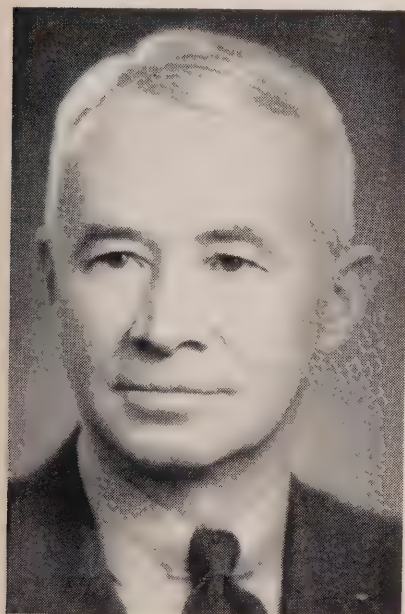
Hydro employees are now waiting expectantly for November 5th at which time "Your Hydro Night" is being held in Columbus Hall on Sherbourne Street at 6 o'clock sharp. Plans have been completed for a very fine programme featuring speeches by Hydro officials and various entertainment numbers by Hydro's own talent. Dr. Holden



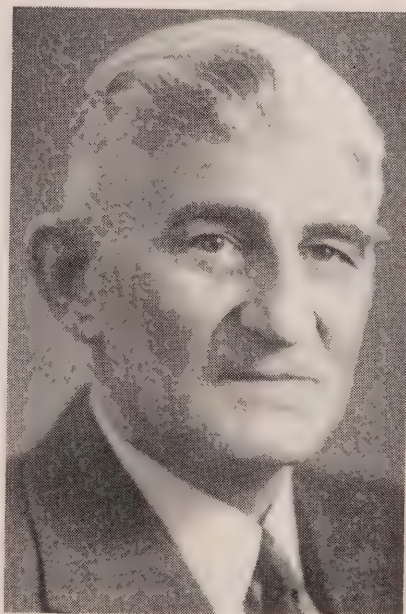
Dr. Otto Holden



John Dibblee



R. L. Hearn



M. J. McHenry

has consented to take the chair. Highlights of the programme will be:

Introduction of Commissioners and Departmental Heads;

R. L. Hearn—"Hydro's Unparalleled Expansion—a Challenge to Every Employee;"

Film—"By Jupiter;"

M. J. McHenry—"The Part the Individual Plays in Consumer Relations;"

John Dibblee — "Opportunities with Hydro;"

During dinner there will be music and singing and later in the evening, among other things, there is to be a keen departmental competition of barber shop quartettes. There will also be a lucky draw for two radios, one for the ladies and one for the men.

"Your Hydro Night" has been organized to foster a better spirit

of co-operation and good will among all Hydro employees. Its aim is to provide not only a fine evening's entertainment, but to make each individual employee conscious of the important role he or she is being called upon to play in the day-to-day operations of the Commission.

HYDRO USERS ASKED HELP SAVE POWER

Co-operation of both municipal commissions and all Hydro consumers throughout the province in helping save electricity at all times, is being sought by The Hydro-Electric Power Commission of Ontario.

In a letter to the local Hydro commissions, it is pointed out that in the face of the present unprecedented demand for power they can render valuable assistance by acquainting their customers with the need for conservation, discouraging the use of power for non-essential purposes and appealing to local industries to reduce their power demands by staggering their operations and possibly planning for staggered working hours.

Through these local commissions each Hydro consumer will, in turn, receive a letter asking for personal co-operation in avoiding waste of electricity. Conservation, it is pointed out, is necessary pending completion of new generating plants now under construction.



If ever there were an "artist's paradise," the countryside around Woodstock, Ontario, certainly merits the title. On a recent visit to that locality I was conscious of the grandeur of autumn—a panorama of breath-taking beauty. The trees in their brilliant mantles of yellow, red, orange and green . . . the brown of the freshly-plowed earth combined to create a picture that only the Great Artist could have painted.

Let us be thankful that we are able to give some of our bountiful harvest to those who are starving in other countries. This is the time to send boxes of foodstuffs overseas. If you have no particular address abroad to send to, you could help the needy through organized groups, such as your own church societies.

Before we get too far away from the summer season, may we point out that the latest frozen dessert is Harvest Ice Cream. Three flavours of ice cream are cut in squares and put in one large freezing tray when partially frozen. Pour a yellow coloured custard sauce over top and freeze firm.

October abounds in events. . . . Many are now making plans for the Thanksgiving weekend. Beginning October 14 is Apple Week. Following this occasion, in the sand dunes of Ontario, is Tobacco Week. And finally, we begin watching for goblins at the end of the month . . . Halloween.

This is a most appropriate time for an exhibition of magic. Make a good butter cake; take out one-third of batter and add to it a square of unsweetened chocolate. Pour the dark mixture down the centre of the pan and put the light batter on either side. If possible, try to make the dark part represent a tree. When baked, ice part of the top to outline a tree.

NUTRI-THRIFT DINNER

Round Steak Roast
Baked Potatoes Mashed Turnips
Quick Jellyed Tomato Salad
Sponge Apple Pudding
Beverage

ROUND STEAK ROAST

2½ pounds round steak (about ¾ inch thick)

Flour
2 teaspoons salt
1 cup chopped celery
1 cup diced carrots
½ cup chopped onions
2 tablespoons fat
1 cup water

Remove bone from steak. Season steak with 1½ teaspoons salt and place on well-floured cutting board. Pound well on both sides with meat hammer or edge of heavy saucer. Combine chopped vegetables and remaining salt and spread over one-half of steak. Fold over other half of steak and skewer edges together. Brown well on both sides in fat in heavy skillet. Add water, cover and simmer about 2 hours or until tender.

Make wise use of the insulated electric oven by cooking certain foods after baking period—switch turned off. Bake custards, simmer soaked prunes, scallop mushrooms, heat left-over vegetables, heat rolls or make melba toast—thus saving time and electricity.

Defrosting the refrigerator regularly reduces the operative time of the motor. A quarter of an inch of ice prevents circulation of cold air.

Wasted bread is poor economy. Store wrapped bread in the refrigerator to maintain freshness. Dry old bread in warm oven and make crumbs. You can use crumbs in dressings, sauces, pies, soups and to top puddings.

Ready-to-eat cereals can be used to advantage to increase the consumption of milk—especially for children. Further, in regard to cornflakes (of which Canadians consume 30 million pounds a year), they are now made from hybrid corn, grown throughout Kent and Essex counties. Previously our largest manufacturer of cornflakes used white corn from other countries.

Macaroni is another cereal food which is produced literally from the ground up, right here in Canada. One macaroni product, a great favourite with us, is egg noodle. It resembles a fine spaghetti but has a different taste and is quite nutritious.

For a little while green tomatoes will be reasonably plentiful—at least everyone with a garden of his own gathers the green tomatoes that will not ripen outdoors, either to promote further ripening or to cook them "as is." Fried sliced tomatoes are just as good in the green stage as in the red; season them as carefully. We are partial to salt, pepper and sweet basil, with minced chives or onion-juice as a sprinkle for them. Now they are ready for the meat loaf platter or other meat or fish dishes.

Careful use of electricity is a wise course to follow, particularly during the fall and winter period when very heavy demands are made on Hydro's resources. By using only the electricity you really need, you enable more power to go to our busy factories and industries. More power means faster production of the things we've been waiting for. Will you help?

Consider skillet meals for economy. Swiss steaks, macaroni and vegetables, stews, and rice with cheese and vegetables are a few suggestions.

MICHENER STRESSES CHANGE IN CANADA

Provincial Secretary, Addressing O.M.E.A. Gathering, Says Increasing Demand For Electricity And High Employment Level Herald Period Of Still Greater Production

Canada in the last decade has undergone a change which is difficult to describe or visualize. The country's productive capacity had been out of all proportion to her population and today she ranks third among the trading nations of the world.

These facts were emphasized by Hon. D. R. Michener, Provincial Secretary of the Province of Ontario, when addressing delegates and guests who attended the annual convention banquet of District No. 3 O.M.E.A. in the Royal Edward Hotel, Fort William, on September 10.

In introducing the speaker, R. G. Walsh, Chairman of the Port Arthur Public Utilities Commission, said that Mr. Michener had attended Oxford University in England, that he had received his Master of Arts degree and was a former Rhodes Scholar, who had been called to the Bar in England in 1923 and to the Bar in Ontario in 1924.

Must Live By Trading

At the outset of his address Mr. Michener said that the significance of the change which had taken place in Canada was one that all Canadians must bear in mind. Canada, he said, was no longer a self-sufficient agricultural nation. Canadians had to live by trading. This year, he speaker believed, that with the great increase in the demand for hydro-electric power as well as the high level of employment, that they would experience a period of production greater than any since the peak year of the war.

Ontario, Mr. Michener said, was the industrial anchor of Canada. Only 33 per cent of the people accounted for 42 per cent of the production. Quebec was second to Ontario and British Columbia was in the next place.

At another point Mr. Michener mentioned the fact that since August 2 a thousand people had come by air from Great Britain to Ontario. He smilingly remarked that two of these people had gone home, leaving 998 in Ontario. He said that it was fair to assume that the population of Ontario now totalled approximately 4,200,000 and that they were looking forward to "life, liberty, and the pursuit of happiness." The Government, declared the Provincial Secretary, was concerned with the fulfilment of that hope.

Mr. Michener stated that there had been a great increase in the responsibilities of governments. In democratic countries, he said, they might describe the conception of government as a service state rather than as a servile state under a totalitarian regime.

The Provincial Secretary cited many interesting statistics which showed the

steadily increasing amounts which were being expended by the Ontario Government on education, health and welfare and other departments of government.

All the Ontario Government's departments spent \$51 millions in 1938 and this year they were spending \$137 millions, he stated. In 1938 the sum of \$11 millions had been expended on education; this year that figure had been increased to \$37 millions. Legislative grants to the districts of Northwestern Ontario had totalled \$978,000 in 1938 and today they were \$3½ millions.

Forestry Report Emphasized

In pointing out that the Department of Lands and Forests had expended \$1,700,000 in 1938 and that they were spending \$7,200,000 this year, Mr. Michener expressed the hope that everyone would read the Ontario Royal Forestry Commission Report compiled by Major-General Howard Kennedy following a year of exhaustive research and issued recently.

The Provincial Secretary next directed attention to the work of the new Health and Welfare Department. Expenditures in this field, he said, had increased from \$7 millions to \$18 millions in the 10-year period. The Department of Highways, he went on, was expending \$30 millions this year and of that sum \$12 millions were being spent in Northern Ontario.

Continuing, he stated that the per capita expenditure in Northwestern Ontario last year totalled \$41.84 while the revenues amounted to \$25.38. For Ontario as a whole, he pointed out, the per capita outlay was \$27.00 and the revenue \$26.00.

Mr. Michener emphasized the fact that the greater the responsibilities a government was called upon to assume the greater was the necessity for a high standard of public service. He did not mean political public service but the kind of service that was received from deputy ministers down to clerks and those people who make public service a career. It was important, he said, that these people be as highly qualified as

AIRING FARM TOPICS

(Continued from page 24)

co-operative marketing and group marketing under various marketing schemes? What has been accomplished by co-operative marketing? What of the future?

JANUARY 12—THE WORLD IS OUR MARKET

What is necessary to encourage an increase in the international movement of goods?

JANUARY 19—DO WE NEED A NATIONAL MARKETING ACT?

Why is a Dominion marketing act being advocated? How would a Dominion act fit in with the Provincial acts now operating? Do present provincial acts mean high prices for the consumer? Do they restrict trade?

JANUARY 26—WHAT THE FORUMS SAY

FEBRUARY 2—IS FARM INCOME USED EFFICIENTLY?

Is farm income used in such a way that the standard of living on the farm is at the highest possible level?

FEBRUARY 9—WHAT PRICE SHALL WE ASK?

On what basis should farmers' prices be determined? On cost of production? According to proportion of the national income? Or what? Are there other factors to consider?

FEBRUARY 16—ARE FARMERS BUSINESSMEN?

Do farmers apply business principles to their operation to the extent that they should? Do they use labour, material, and money efficiently? Does bookkeeping pay?

FEBRUARY 23—WHAT THE FORUMS SAY

MARCH 1—WHAT THE MACHINE HAS DONE TO US

What effect has mechanization had on the size of farms and the number of farmers? What has been its effect on soil management? Is a high degree of mechanization good or bad for rural people?

MARCH 8—DO WE FARM THE SOIL—OR MINE IT?

Is our soil losing its fertility? How does poor soil management affect the farmer's income? Do

(Continued on page 31)

those who were serving in the industries of the country. Elected officials, or those who volunteered their services, he declared, should possess high qualities of leadership and responsibility.

Continuing, Mr. Michener declared that democracy was not something that could be taken for granted. The responsibility of public men, he contended, was to preserve democracy by making it work and selling it to the rising generation.

#his and #hat

By The Editor

IN THEIR spare time some Hydro employees collect stamps and paint pictures, while others take photographs or go after the "big 'uns." However, one of the most interesting of these after work activities to come to our attention is associated with the noteworthy voluntary service which has been rendered by Miss Jean McClure who has been identified with the Executive Department of the Toronto Hydro-Electric System for the past 10 years.

We prevailed upon Miss McClure to let us have a personal photograph which is reproduced on this page and we also managed to secure a few interesting facts concerning this petite and charming young lady.

Apart from being an efficient amanuensis and organizer, this Scottish-born Hydro employee holds a certificate as a teacher of speech.

Here are some of the facts we learned about her: since June of this year she has been devoting most of her spare time to work among British war brides and women from other lands. In her efforts she has had the wholehearted support and co-operation of Controller John Innes and Reverend Robert Barr, Minister of Knox Presbyterian Church, of which she is a member. Every Tuesday evening she has been conducting social gatherings or classes which have been attended, on an average, by between 40 and 50 young women from overseas. At these gatherings, Miss McClure has discussed Canadian ways and mannerisms and the importance of correct speech and, at the same time, has explained how newcomers can best adapt themselves to life and living in Canada.

As a result of Miss McClure's efforts, approximately 40 of her "pupils" have been trained for positions in business, while something like 100 employers have been seeking young ladies who have had the benefit of her guidance.

Only recently, members of the British War Brides' Association honoured their



Jean McClure,
Toronto Hydro-Electric System

"teacher" upon the occasion of a reception at Knox Church, Miss McClure having been the recipient of a beautiful bouquet of flowers.

We would like to associate ourself with those who have paid tribute to this active Hydro worker. Other facts which we have learned clearly indicate that the instruction and personal counsel which she has voluntarily given have been invaluable to many young women who have come to make their home in this great land.

A LADY who reads this page has sent along a few clippings to back up her contention that the attempt now being made to stampede ladies into adopting long skirts is "unfair, senseless, futile and impractical."

This lady says that many of her friends who have adopted "the new out-dated style" have been embarrassed by face-

tious remarks made by their boy friends. In one case, according to our informer, the boy friend flatly told his lady love that if she went long on dresses she would be short of his companionship.

These observations would indicate that the so-called designers of ladies' fashions have made a bad bloomer in trying to foist long skirts on the present-day generation. The clippings which we have received show that in various parts of the United States and Canada organized women's groups, university students, actresses and business girls are fighting any attempt to bring back the old styles. Veterans, we read, have come out with the declaration that their wives are not going to spend money unnecessarily to change their entire wardrobe. Another story indicates that some girls have raised the hemlines a little higher in defiance of the new edict by the fashion moguls.

The lady who brought these stories to our attention asks us what we think about the situation. That is an embarrassing question but we'll answer it.

We have to admit that while it is not a gentlemanly thing to do, we have had many a good laugh at these idiotic styles. We are sincerely distressed, however, to see young ladies, who used to look quite smart in their appearance, suddenly appear in an attire which, in some cases, reminds one of the old music hall comedienne.

Because fashion designers in the past have found it a simple matter to change styles, they have apparently formed the impression that it would be an easy trick to bring back long skirts. It was to be expected that many ladies, who pride themselves on being fashionable, would be stampeded. However, judging by press reports and from our own observations, it would appear that the majority on this occasion have shown they have minds of their own. In other words, they appreciate the importance of a smart appearance. Therefore, they have retained the short skirt which, to our way of thinking, is both practical and sensible as well as smart.

UNPRECEDENTED DEMANDS

(Continued from page 12)

meeting, it was moved by J. R. Beaulieu, of Penetanguishene Water and Light Commission, and seconded by Roy S. King, of Midland Public Utilities Commission, that a committee be set up to look into the stabilization of rates fund.

In this connection, it was moved by R. D. Boyes, of Alliston, and seconded by H. G. Robertson, of Barrie Public Utilities Commission, that the following personnel be appointed to this committee: J. R. Beaulieu, Penetanguishene; Walter Dixon, Arthur; Roy S. King, Midland; George F. Hutcheson, Huntsville; and Herman S. N. Denef, Hanover. These motions were carried.

The following officers and directors were re-elected for the ensuing year: President, G. F. Hutcheson, Huntsville; First Vice-President, Walter Dixon, Arthur; Second Vice-President, W. E. Theaker, Paisley; Secretary-Treasurer, Herman S. N. Denef, Hanover; Hon. President, R. J. Beaulieu, Penetanguishene. Directors: C. J. Halliday, Chesley; J. F. Craig, Barrie; Stanley Sarjeant, Orillia; A. J. Walker, Wingham; Col. A. A. Kennedy, Owen Sound; M. J. McCubbin, North Bay; Joseph Bull, Collingwood.

The convention took on a festive note this year when the Gravenhurst and Huntsville Utility Commissions acted as joint hosts and the delegates met on the Muskoka Wharf at Gravenhurst and made the boat trip on the "Sagamo" up through the lakes.

W. T. MacKENZIE DIES

WILLIAM THOMPSON MACKENZIE,

ZIE, formerly chairman of the Napanee Public Utilities Commission, died recently at the Kingston General Hospital. Although in ill health for the past two years, he had continued to take an active part in his business until a few weeks before his death.

Mr. MacKenzie was born at Rosseau, Muskoka, in November, 1889. About 28 years ago he went to Napanee as an assistant in a drug store, and later took over the business for himself.

Mr. MacKenzie had been chairman of the Napanee Public Utilities Commission since 1938, and prior to that time he was a commissioner for five years. He had also served as alderman in 1928 and 1929.

During the First World War he spent four years overseas with the Royal Engineers of Toronto, and went to Napanee shortly after being demobilized. He was a member of the Royal Arch Masons and served as First Principal of Mount Sinai Chapter in 1927, and as Grand Superintendent of Prince Edward District in 1934. He was also a member of the Oddfellows Lodge, and for a number of years was a Rotarian, serving as President of the Napanee Club for one term.

He is survived by his widow, the former Gladys King, of Gravenhurst, and his brother, Alexander MacKenzie, of Waterloo. Interment was at Riverside Cemetery where the burial service of the Masonic Order was conducted by a large number of his brother Masons.

NEW A.M.E.U. SCRIBE



W. RONALD MATHIESON, a member of the Editorial Services Section of the Commission's Promotion Department, who has been appointed Secretary-Treasurer of the Association of Municipal Electrical Utilities. He succeeds W. Roy Hurmer who was recently named Assistant Director of the Consumer Service Division. Mr. Mathieson, a native of Toronto, received his education at local schools and Queen's University. During the war he served for two years in the R.C.A.F. and, following demobilization, he joined the Commission as a journalist on the staff of Hydro News. Mr. Mathieson, who is already widely known in Hydro circles throughout Ontario, has now taken over his new duties and will be a familiar figure at A.M.E.U. gatherings.

STORY OF LOST TEETH MAKES DELEGATES BITE FOR FORT FRANCES

In deciding to accept the invitation to hold the 1948 convention at Fort Frances, delegates to District No. 3 O.M.E.A. convention at Fort William on September 10 received assurances that the place had a reputation for not only hospitality and a friendly spirit, but that it enjoyed a reputation for honesty.

For instance, there was the testimony of Mickey Moran of Sioux Lookout, who recalled that he had lost his teeth at Fort Frances and that they had been returned.

That did it! The delegates bit. Fort Frances was the unanimous choice!



HON. GEORGE H. CHALLIES, the Commission's First Vice-Chairman, and Jack Pattison, Fort William Hydro-Electric Commission, were the principals in a humorous incident which occurred during the visit of District No. 3 O.M.E.A. to the Agassabon plant site. With a grand flourish, Mr. Pattison presented Mr. Challies with a bouquet of local wildflowers, and the latter was quick to make "suitable reply." The Hydro News' cameraman was on hand when the incident happened and got the above shot.

Lighter Lines



"Sutton, are you actually interested in this subject, or are you just suffering from insomnia?"

Habit is habit and not to be flung out of the window by any man but coaxed downstairs a step at a time.—Mark Twain.

Accused: "I got drunk in order to compose a new drinking song."

Magistrate: "And may I ask, did it work?"

Accused: "No, I couldn't get beyond the first two bars."



"Quite a coincidence. You from Maine and me from Idaho and both peeling potatoes!"

September used to be the seventh month in the ancient Roman Calendar but when Julius Caesar revised the calendar he made it the ninth month and gave it 31 days but kept its original name. When Augustus changed the name of the preceding month to August in honour of himself he also stole September's thirty-first day and added it to his own month so it should have as many days as Julius Caesar's month, July. So much for the petty vanity of dictators! Our Saxon ancestors called this month Herst-Monath or barley month since at that time the barley crops ripened.

The evening lesson was from the book of Job, and the minister had just read: "Yea, the light of the wicked shall be put out," when a fuse blew and the congregation was left in total darkness. This minister was of stern stuff, though, and with scarcely a pause he met the situation. "Brethren," he said, "in view of the sudden and startling fulfillment of this prophecy, we will spend a few minutes in silent prayer for the Hydro-Electric."

The secret of being miserable is to have leisure to bother about whether you are happy or not.—G. B. Shaw.

On Hydro's own calendar we note September 4th was the anniversary of the opening of the first electrical generating station which aimed to serve commercial customers on a real business basis. It was 65 years ago that Thomas Edison embarked on this venture. When it opened there were 59 customers all within a radius of one mile for that was as far as the electricity could be transmitted at that time.

Some years ago Mrs. Sidney Webb was present at a dinner party, and a young man seated next to her said: "All this talk about feminism is utter rot. There isn't a woman alive who wouldn't rather be beautiful than clever." "Quite true," agreed Mrs. Webb, "but the reason for that, you see, is because so many men are stupid and so few are blind."



"I'll have more time to run errands, Mom. I quit school!"

Half the world knows how the other half ought to live.

At a dinner-party the subject of eternal life and future punishment came up for a lengthy discussion in which a diplomat present took no part. A lady near him turned and exclaimed: "Why do you not say anything? I want your opinions." The diplomat replied gravely: "Madam, you must excuse me; I am silent of necessity. I have friends in both places."



"An athlete, Willie, is a dignified bunch of muscle entirely incapable of shoveling snow or carrying out ashes!"

DELEGATES VISIT AGUASABON PLANT AND PAPER MILL

Trip Forms Part Of District No. 3 O.M.E.A. Convention

A special trip to the Commission's new 55,000 horsepower plant, now under construction on the Aguasabon River near Schreiber, and to the new \$15,000,000 paper mill, which is being erected by the LongLac Pulp and Paper Company two miles from the new Hydro development, was a highlight of the District No. 3 O.M.E.A. convention.

A party of approximately 50 delegates and guests boarded a special railway coach at Fort William at 7:30 in the morning and arrived at Terrace Bay shortly before noon to be received by officials of the LongLac Company. Boarding a bus, the visitors were first taken on a tour of the area where prefabricated homes are now being erected for the paper mill officials and employees. Hydro News was informed that more than 200 of these homes are to be erected in the Company's townsite which, eventually, will have a population of between 1,200 and 1,500 people, including wives and children of employees.

A number of the employees who were

engaged in the construction of the new mill smilingly told Hydro News that Terrace Bay was one place where there would be no housing shortage while others, in commenting upon the construction of these homes, expressed the opinion that prefabricated dwellings were the answer to the housing problem confronting Canada at the present time.

Up-to-date stores and recreational facilities for the employees are being provided by the Company in planning this attractive community. Following an inspection of the "residential area," the District No. 3 delegates and their guests were entertained at luncheon by the LongLac Company, the meals being served in the up-to-date cafeteria which is being used by the men now engaged in building the new paper mill.

Following lunch, the visiting party was divided up into three groups and taken on a tour of the new mill under the direction of specially assigned guides. The capacity of the new plant, in which Hydro power will play a pre-eminent role, will be approximately 300 tons daily. Construction of this important new mill is expected to be completed by the fall of next year—about the time Hydro's new Aguasabon development will be placed in service and ready to deliver power.

The visitors were next conveyed by bus to the site where construction is now under way on Hydro's Aguasabon development which ranks as one of the

Commission's most interesting projects from an engineering standpoint. At the intake the water will flow down a vertical shaft for a distance of 270 feet to a horizontal tunnel which will be 3,500 feet long and which will be connected to a steel penstock, 100 feet in length. Both the vertical shaft and the horizontal tunnel are being lined with concrete. The work which is now being done on both the shaft and the tunnel aroused keen interest among the visitors who were accompanied by C. H. Hayes, General Superintendent, and H. H. Johnson, Resident Engineer.

At the close of the tour, the O.M.E.A. delegates were guests of the Commission at dinner which was served in the up-to-date camp cafeteria.

AIRING FARM TOPICS

(Continued from page 27)

we need a more aggressive soil conservation program?

MARCH 15—DO WE WANT MORE IMMIGRATION?

Would Canada be better off if large numbers of immigrants were accepted? How should they be directed into various occupations? Would a smaller proportion of rural people be a good or bad thing for farming?

MARCH 22—WHAT THE FORUMS SAY



DELEGATES TO District No. 3 O.M.E.A. convention will retain many pleasant and interesting memories of their visit to the site of Hydro's new 55,000 horsepower development now under construction on the Aguasabon river. One of the most pleasant of these memories will be associated with the very fine meal they received in the modern cafeteria and the people who prepared and served it. They are: R. Thomas, G. Brown, I. Larabie, F. Grey, D. Aylward, A. Bodner, C. Fraser, D. Brown, S. Ward, H. Caley, M. Yates and O. Conrad.

AN INTERESTING FORT WILLIAM "FRONT LINE"



ONE IMPORTANT reason for the success of the recent District No. 3 O.M.E.A. convention at Fort William can be found in the person of A. W. H. Taber, the untiring Manager and Secretary of the Fort William Hydro-Electric Commission. Mr. Taber who is also Secretary of District No. 3, is shown here with at least seven charming reasons why the environment at the up-to-date Fort William Hydro office is so pleasing. These reasons, from left to right, are: Angela Carson, Winnifred Jones, Viola Duffield, Muriel Weaver, Agnes Stark, Florence Patison and Louise Matthews. The Male Section of the staff were ably represented by the two gentlemen shown behind the arresting "front line." They are Tom Leeney and Arthur Hunter.

HORSEPOWER STORY TOLD BY MICHENER

At the recent District No. 3 O.M.E.A. convention at Fort William, Hon. D. R. Michener, Ontario's Provincial Secretary, who was the principal speaker at the evening banquet, proved that he is a raconteur of no mean ability.

One of the stories which he told, and which made a particular appeal to the Hydro delegates, dealt

with the testimony of a witness and the comments of a judge and a lawyer.

It is unfortunate that the written word cannot convey the gestures, voice inflections and atmosphere which are associated with most stories and which contribute so much to the actual telling. The reader will have to imagine the setting of Mr. Michener's story to fully appreciate it. It was a very warm afternoon and the judge's

head began to nod. Meanwhile, an electrical engineer was in the box giving testimony involving an explanation of the word "horsepower." The witness had just completed his testimony when the judge "came to" suddenly, rapped the bench and, in a commanding voice, addressed the Crown attorney "Where did you say the horses were, Mr. Wilson?"

The Crown, who was equal to most occasions, replied quietly: "I am coming to that Your Lordship."

HYDRO AT WORK

Power Plays Widely Diversified Role
During Two Weeks of C.N.E.



Anyone who saw the amazing glitter of lights at the Canadian National Exhibition this year would naturally, and rightly, conclude that electricity must play an important role in that famous institution. It has, in fact, been a popular drawing card for the past sixty years, since 1947 marks the Diamond Jubilee of electrical lighting at the Exhibition. The programme of 1887 announced "Brilliant Illuminations nightly with 200 Electric Arc Lights—with Chinese Lanterns and Coloured Globes, Beautiful Prismatic and Electric Fountains, etc."

Since that day many strides have been taken and at the present time much of the beauty of the grounds, not to mention all the mechanics of both exhibits and amusements, are dependent on electrical power.

Throughout the 350 acres of grounds extends a network of 40 miles of lead-covered cables. Over them are distributed a power load of 8,000,000 watts. All these cables are neatly hidden under the ground and form, incidentally, a proving base in Canada for the underground cable system. In charge of the whole electrical department is a staff of 84 men under chief-engineer F. C. Mayberry.

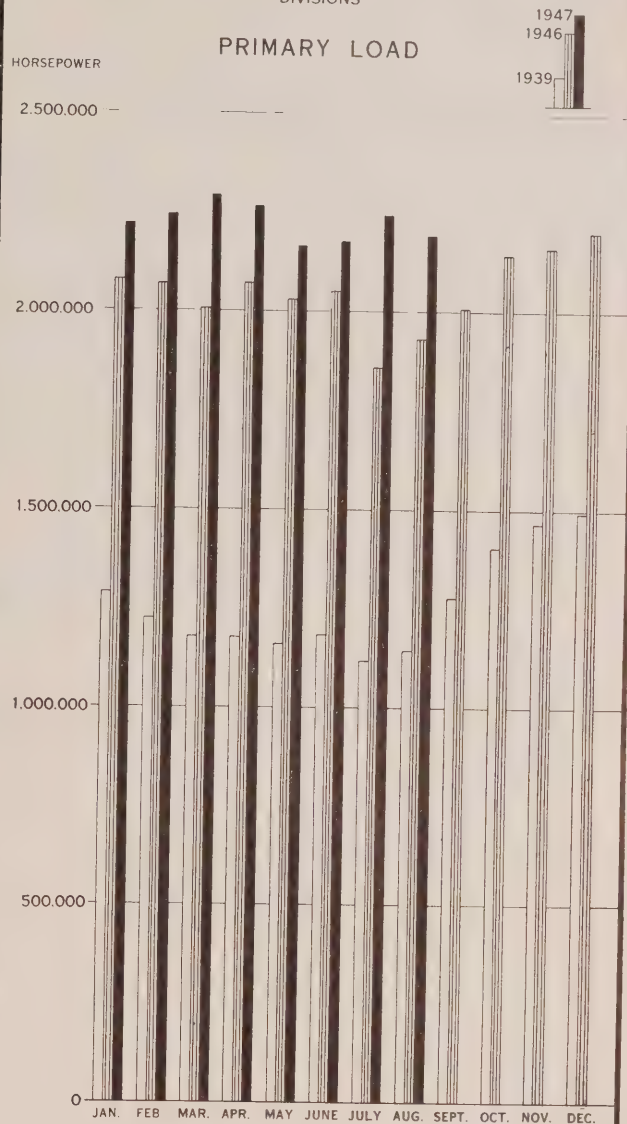
Decorating the grounds are 150,000 lamps, 350 street lights, 160 illuminated pylons and this year there were some fine new lighting effects around the fountain, band shell and gardens.

As well as 60 and 25-cycle and direct current, 50-cycle power is also supplied for exhibitors. For instance the Midway rides are driven by power provided through 60-cycle frequency-changers. The 60-cycle is used also for the operation of many delicate devices brought over by exhibitors from the United States. The 50-cycle is available for British and French electrical exhibitors.

The C.N.E. operates its own substation with a hook-up to the Strachan Avenue plant of the Toronto Hydro. For 1947 the Exhibition's power supply for the two weeks was increased 50 per cent over that of the previous event in 1941. The electrical plant and equipment in the grounds now comprises 17 major indoor transformer stations, 130 transformers in sizes up to 600 kv-a. and the whole underground network.

SOUTHERN ONTARIO SYSTEM

EMBRACING NIAGARA, GEORGIAN BAY AND EASTERN ONTARIO DIVISIONS



POWER DEMANDS AND TOTAL OUTPUT

AREA SERVED BY	MAXIMUM 20-MINUTE PEAK KW		PER CENT INCREASE
	AUGUST, 1947	AUGUST, 1946	
PRIMARY DEMANDS — ACTUAL LOADS PLUS CUTS			
SOUTHERN ONTARIO SYSTEM	1,735,037	1,442,723	+ 20.3
THUNDER BAY SYSTEM	108,600	101,000	+ 7.5
NORTHERN ONTARIO PROPERTIES	<u>176,298</u>	<u>152,680</u>	+ <u>15.5</u>
TOTAL	2,019,935	1,696,403	+ 19.1
TOTAL OUTPUT — INCLUDING POWER PURCHASED			
SOUTHERN ONTARIO SYSTEM	1,637,937	1,530,363	+ 7.0
THUNDER BAY SYSTEM	111,300	108,100	+ 3.0
NORTHERN ONTARIO PROPERTIES	<u>202,008</u>	<u>198,065</u>	+ <u>2.0</u>
TOTAL	1,951,245	1,836,528	+ 6.2



THE *Electric* METER Is for Your Protection

EVEN though your Hydro makes electricity available to you in Ontario at a very low cost, it is important that you pay only for the amount of power that you actually use. The electric meter on duty in your home, is your protection against paying for more than you consume.

Every one of some 800,000 meters in Ontario is tested and certified by a Dominion Government inspector at regular intervals to assure complete accuracy. Electric meters are among the finest of jewelled precision instruments . . . as constantly true as the finest watch.

For your protection, Hydro installs a separate meter, exclusively for your own

household. Having a meter of your own is the only possible way to be sure that you only pay for the electricity which you use. Imagine buying food from a merchant who weighs several people's orders at the same time, and splits the cost evenly regardless of the size of the orders! You want your order weighed individually when you buy food. When you use electricity your meter assures accurate individual measurement.

Low cost Hydro service in Ontario offers amazing comforts and conveniences. For your protection . . . so that you will pay for only the amount of Hydro you actually use, a Government Inspected Meter is installed for your own household exclusively.

**THE HYDRO-ELECTRIC
POWER COMMISSION
OF ONTARIO**

HYDRO *News*



ALUMINUM



EVENT OF THE MONTH



HERE IS an interesting, informal study of Princess Elizabeth and Lieut. Philip Mountbatten whose marriage will be solemnized in Britain's famous Westminster Abbey on the 20th of this month.



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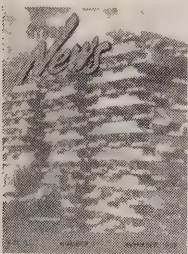
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THE FRONT COVER



With the very vital assistance of Hydro power, 4,000,000 pounds of aluminum a month are now being produced in the form of sheets, tubings, extrusions and structural shapes at the Kingston plant of the Aluminum Company of Canada. The metal comes in the form of ingots from the great aluminum smelter at Arvida, Quebec. The front cover illustration for this month's Hydro News shows a stack of glistening ingots being checked in the Company's yard before being sent to the furnaces and mills for re-melting and fabrication.

Volume 34

November, 1947

Number 11

CONTENTS

	Page
Incubator Baby - - - - -	2
Page Three - - - - -	3
Second Unit At DeCew Opened - - - - -	4
Aluminum - - - - -	9
Dr. Urquhart's Page - - - - -	13
District No. 1 O.M.E.A. - - - - -	14
Quarter Century Club Dinner - - - - -	15
District No. 5 O.M.E.A. - - - - -	18
District No. 6 O.M.E.A. - - - - -	21
District No. 1 O.M.E.A. - - - - -	25
"Red Seal" Homes - - - - -	29
Hydro Home Forum - - - - -	30
Lighter Lines - - - - -	31
Accounting Committee—A.M.E.U. - - - - -	32
Presentation To 11-Year-Old Boy - - - - -	34
U.S. Committee Visit Ontario - - - - -	35
Electrical Inspection Staff Meeting - - - - -	36
Monthly Load Summary - - - - -	37





INCUBATOR BABY: this lively young miss is really a "graduate" and only consented to go back into her electric box as a favour to the photographer. (For story, see page 37.)

* Page Three *

ROYAL WEDDING

A wedding is both a happy and solemn event in the lives of the parties concerned. It is an occasion when a man and woman not only pledge their troth to one another but one on which they unite to assume the high responsibilities and obligations associated with citizenship in a democratic society.

These responsibilities and obligations are greater and more exacting when one of the parties involved is a future Queen as in the case of Princess Elizabeth whose marriage to Lieut. Philip Mountbatten will be solemnized in Westminster Abbey in London this month.

Her Royal Highness, like her father and mother, the present King and Queen, has won the hearts of Canadians. Charming and gracious, the Princess has exemplified that friendly democratic spirit which endeared the members of the Royal family to the British people during the dark days of the war.

The people of Canada will unite with the peoples of the other British Commonwealths in extending warm and sincere wishes to both Her Royal Highness and Philip Mountbatten for their continued happiness and long life.

During these days of international anxiety and uncertainty, a heavy burden of responsibility rests upon the shoulders of those who are called upon to dedicate their lives to the service of their country.

That burden can be lightened by the loyalty and love of the people whom they serve.

WELL-MERITED TRIBUTE

Upon the occasion of his first appearance before the members of the Quarter Century Club since assuming the high responsibilities associated with the position of General Manager and Chief Engineer, R. L. (Dick) Hearn paid tribute to the faithful service which has been rendered to the people of Ontario by Hydro employees throughout the Province.

Those who enjoy the privilege of close association with Mr. Hearn know that he dislikes formal platitudes and, therefore, there could be no mistaking the warmth and sincerity of his remarks when addressing the gathering at the Twelfth Annual Dinner of the Quarter Century Club. His words were addressed to a membership whose combined record of Hydro service totals 24,000 years!

The loyalty, courage and hard work of the employees, he said, had been responsible for Hydro becoming one of the finest institutions of its kind in the world. He also told his audience that it would take these same qualities of heart and mind to meet the tremendous responsibilities and problems of the future as the Commission geared its organization for still greater service to the people.

The noteworthy record already chronicled by Commission employees is one that will be jealously guarded by all who enjoy the privilege of being members of the great Hydro family and of the Quarter Century Club. That record may be taken also, as a criterion of the character of the service which may be expected in the momentous years ahead.

KNOWLEDGE AT WORK

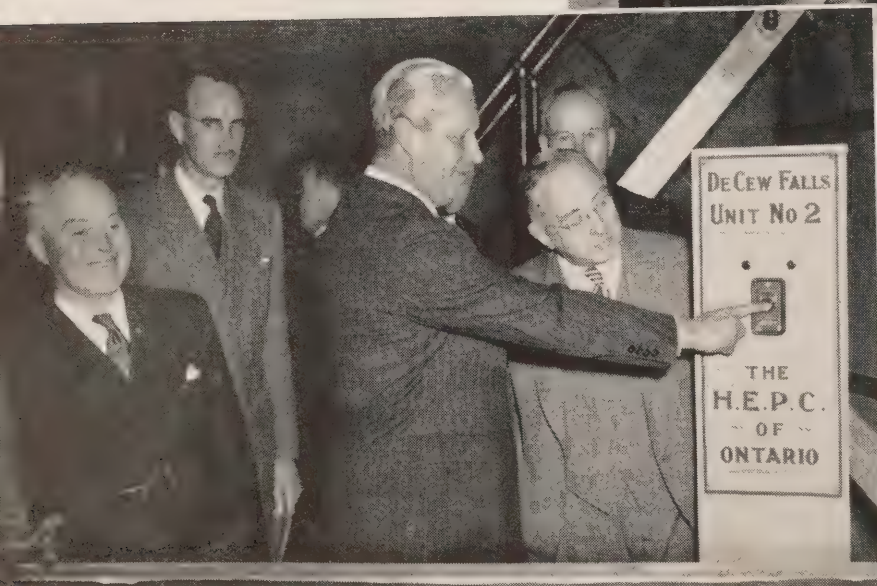
Proceedings at the recent Regional Conference of the Special Libraries Association, an international organization of librarians, directed attention to the highly important role these librarians are playing in the day-to-day life of modern business and industry.

While in Toronto, the members of this association, including librarians from Montreal and upper New York State, were the guests of the Toronto branch of which Miss Phyllis Foreman, the Commission's librarian, is President. As a result, the visitors, numbering 136, had an opportunity of inspecting the Commission's highly efficient library and seeing at first hand how its important functions are closely related to overall operations of Hydro in Ontario.

These are times when technological advances are being made almost overnight. Indeed, the formidable mass of accumulated knowledge on any one subject is enough to discourage even the stoutest-hearted seeker after facts. That is why a library is so important to an institution like the Commission. By gathering all available information on a wide range of vitally important subjects and by classifying and indexing that data in accordance with an efficient system, the librarian and her staff can make available required information in a minimum of time. In this way, engineers and other professional men have at their disposal the latest facts on scientific accomplishments and the results of research in their particular fields in an organized form so that it can be readily digested.

The guiding principle and motto of these librarians seems to have been well chosen. It is: "Putting Knowledge to Work."

FIRST OF the Commission's post war projects to be placed in service, the second 70,000-horsepower unit at the new DeCew Falls plant near St. Catharines was set in motion by Prime Minister George A. Drew, on September 26th upon the occasion of the official opening ceremony. The first unit at DeCew, which was also "switched on" by the Prime Minister in October, 1943, can be seen in the foreground of the illustration on the right. The second unit is shown immediately in front of the flag-draped wall. In the lower illustration, Hon. Geo. H. Challies, First Vice-Chairman of the Commission, watches closely as Col. Drew touches the switch. Included in this group are R. L. Hearn, General Manager and Chief Engineer, (extreme left); Dr. Otto Holden, Assistant General Manager Engineering; Osborne Mitchell, Secretary, H.E.P.C.; and W. Ross Strike, K.C., Second Vice-Chairman of the Commission.



Second DeCew Unit Now In Service

Prime Minister George A. Drew At Official Opening Acclaims Development As "One Of The Great Power Houses Of Peace"—Two Units Generate Total Of 140,000 Horsepower

By The Editor

"One of the great power houses of peace" was opened on September 26, when Prime Minister George A. Drew of Ontario turned the switch which set in motion the second 70,000 horsepower unit at the DeCew Falls development. In attendance were cabinet colleagues, Commission engineers and workers who built the plant, Hydro personnel from many municipalities and members of the press. Construction of the new unit, at an

estimated cost of \$7,700,000, was started in October 1945. The new DeCew plant, with its two units now in service, is generating a total of 140,000 horsepower, while the old DeCew plant, whose original installation was made in 1898, contains nine generating units with a total combined capacity of 50,000 horsepower.

Presented to the gathering in attendance by Hon. George H. Challies, First Vice-Chairman of The Hydro-Electric Power Commission of Ontario, Prime Minister Drew said that it hardly seemed

four years since he had opened the first unit at the new DeCew plant.

"At that time," he said, "I spoke of this rather simple but solid looking building as a fort of freedom. Today, as this new source of power is made available to the people of Ontario, I think we can very properly regard this as one of the great power houses of peace."

The opening of the new unit, continued the Prime Minister, represented the achievement of the engineers and of

(Continued on page 6)

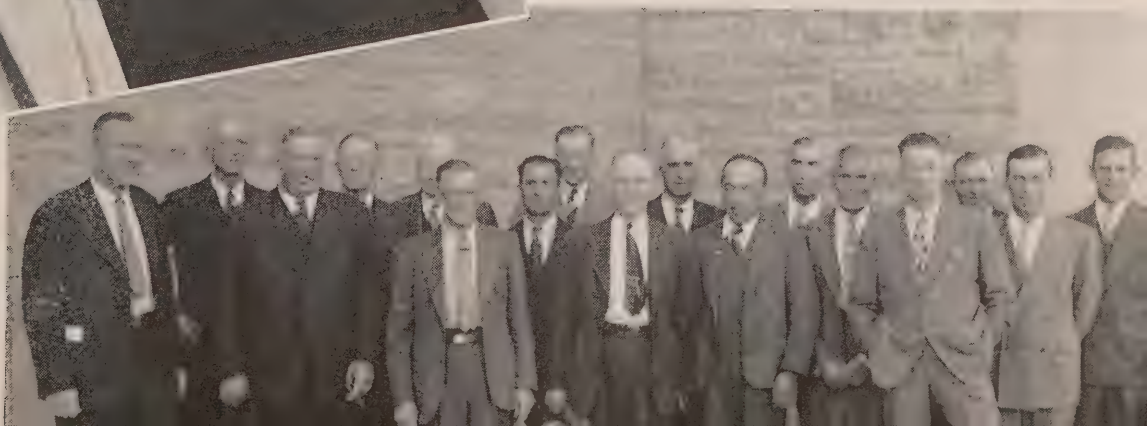


A LARGE gathering of Commission personnel, representatives of Hydro municipalities and members of the press were on hand for the opening of the second 70,000-horsepower unit at the new DeCew Falls' plant where Prime Minister George A. Drew was greeted (left) by Hon. George H. Challies, First Vice-Chairman; R. L. Hearn, General Manager and Chief Engineer; and David Forgan, Construction Engineer. Col. Drew is shown below being introduced by L. J. Gallagher to Commission personnel.

SHORTLY BEFORE the opening ceremonies took place, the Hydro News' photographer got this interesting candid shot, below, of David Forgan, the Commission's Construction Engineer, and L. J. Gallagher, Superintendent of Construction at DeCew.



HERE ARE some of the men who were introduced to the Prime Minister before the opening ceremonies. They are, from left to right: Lou Gallagher, Joe Hutchison, Jack Stevens, Hughie Hendry, Leslie Bell, George Pearce, Harry Skehar, Gordon Taplin, Bert Myers, Dave Lee, Tony Wranich, Myron Lake, Fred Chuckley, Bill Lamb, Roche McDonald, Jack Joyce and Goldie Ashley.



SECOND DECEW UNIT

(Continued from page 4)

those whose day-to-day work had combined to make it a reality.

In his address, Hon. George H. Challies, First Vice-Chairman of the Commission, recalled that when the Prime Minister switched on the first generator at DeCew four years ago, the Allies had not invaded Europe and they had required electric power to build the weapons for freedom.

"You will also recall," remarked Mr. Challies, "that in order to save labour and materials we took the spare generator from the Abitibi Canyon plant and transported it to this site so that an additional 65,000 horsepower could be used to supply the war demands of the Niagara Peninsula."

Today, continued the First Vice-Chairman, after two years of peace they had found that the demand for power had increased by 25 per cent over the peak period of the war and they were putting forth every effort to bring into production as quickly as possible sufficient power for peace-time needs. The second unit which was being placed in operation, generated 70,000 horsepower and was the first in the large construction programme which would bring into service within the next few years 900,000 horsepower at a cost of more than \$250,000,000.

Continuing, Mr. Challies said that the new unit would materially help in meeting the power problems this Fall and Winter. It would not solve these problems but it would make a large contribution towards producing these materials required in their peace-time economy, and it would help also to keep workmen more fully employed.

Mr. Challies extended a warm welcome to members of the O.M.E.A., A.M.E.U., Hydro municipalities and representatives of the press. He also paid tribute to the members of the Commission staff who had laboured to bring the new unit into operation.

Bringing Increased Production

Speaking at the luncheon in the camp cafeteria following the opening ceremonies, Prime Minister George A. Drew said: "I would like you to think of this formal opening of the new unit at DeCew Falls as something more than a great engineering and building achievement. It marks the beginning of the completion of the great series of post-war projects which will bring increased production in our cities, on our farms, in the mines, and in the great forest industries of the north. This is one of eight post-war power plants upon which construction has been started since the end of the war. These new power sites from which 900,000 horsepower of

new electric energy will flow into the distributing networks of the Hydro-Electric power system are now in varying stages of construction."

Mentioning the fact that DeCew was a 25-cycle plant, the Prime Minister pointed out that development had been started before any recommendation had been made to the Ontario Government that consideration should be given to a change from the 25 to the 60-cycle frequency, and of necessity, it had been completed at the frequency originally planned.

Proceeding, he stated that a decision had not yet been reached in regard to the proposed change from 25 to 60 cycle.

"You may recall," he said, "that when this subject was placed before us, less than a year ago, it was evident that more information was required before the government took the responsibility of approving of an expenditure which might easily reach an aggregate of \$200,000,000 without adding a single horsepower to the available supply of electric energy in the Province of Ontario. No man can possibly question the many advantages that would result from a uniform 60-cycle frequency throughout the whole of Ontario. There are many important advantages, too obvious to need mention, but once again I can only repeat that we were confronted, and are today confronted with the fact, that this change, highly desirable though it may be, does not add to our productive power and a \$200,000,000 expenditure for the purpose of making more convenient and satisfactory power available, must not be undertaken until we are absolutely sure that it is economically sound to commit the government and the H.E.P.C. to an expenditure for this convenience, which amounts to more than one-third of the total of its present capital assets."

Proposed Frequency Change

Premier Drew said that he was mentioning that in order that they would know why still further new power was coming into the system at 25-cycles and why no announcement had as yet been made, or would be made for some time, as to the final decision on that subject. He pointed out that engineers who had had the most extensive experience on this continent in frequency changeover had been engaged to review all the related factors and make their recommendations. An expert staff had been working on the subject since the early Spring and they had informed him that it would not be possible to present even their preliminary recommendations until close to the end of the year.

The Prime Minister also mentioned that he had made arrangements while in Britain last May for Mr. Harold Hobson,

former Chairman of the Central Electricity Board in England, to come to Ontario to give them the advantage of his experience in that field. "He (Mr. Hobson) was with the Central Electricity Board, better known perhaps as the British Grid System, when it carried out the greatest frequency changeover ever undertaken in the world," said the Prime Minister.

"Thus," he continued, "we will have the advantage of the combined advice of the outstanding experts on this subject in the United States, of an outstanding expert in Great Britain, and of the engineering staff of our own vast hydro-electric power system in whom, I assure you, the government has the most complete confidence. I feel sure you will agree that before committing the people of Ontario to an expenditure of \$200,000,000 or more, it was wise for us to make sure that we had the advice of those who had been called upon to deal with this subject in the United States and Britain. I am aware that there are those who seem to think it is unnecessary to engage expert advice in great undertakings of this kind, but I am reasonably certain you will share our view that the government and the Commission, but even more the municipal authorities and the people of Ontario generally, are entitled to have the best practical advice available anywhere before committing our people to so vast an undertaking on top of these other costly construction projects which do bring new power to the service of our people."

Care In Use Of Power

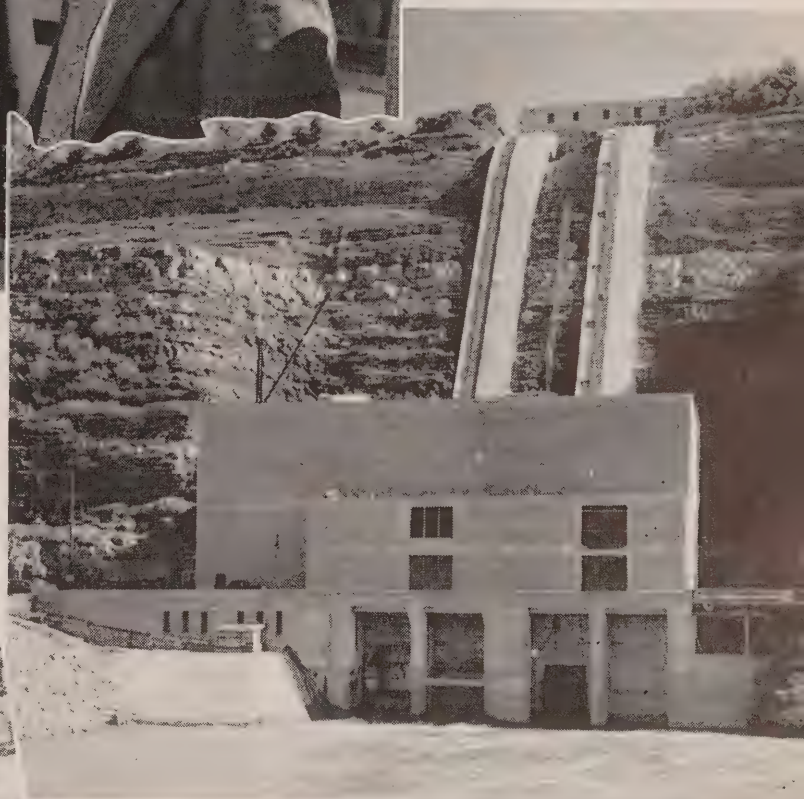
At another point, Prime Minister Drew urged everyone to exercise care in the use of power during the coming winter. The Province, he pointed out, was experiencing a period of unprecedented growth and there had been an enormous increase in the demand for power. These new demands, he emphasized, were being made on a scale never approached at any time in the past. All of which, the Prime Minister emphasized, was merely indication of the tremendous expansion which was taking place in every part of the province. New industries, new mines, new forest activities, and what was of the utmost importance, a greatly increased demand for rural power were all merely an indication of their strong position and, at the same time, of the extent to which their whole economy rested upon the production of electric energy.

Continuing, Mr. Drew said that new construction could not possibly keep pace with such a demand until electrical equipment and constructional requirements were in freer supply. The construction of a new power site, particularly great

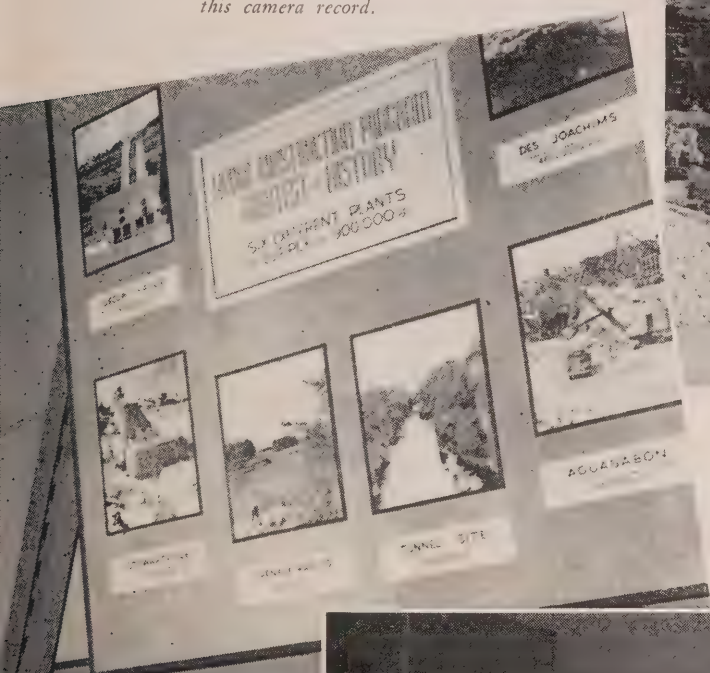
(Continued on page 8)



At the new DeCew Falls plant, Prime Minister George A. Drew displayed keen interest in the work which had been done in building the second unit and in the people who had served on the project. He is shown here talking to David Forgan, Construction Engineer, H.E.P.C.; L. J. Gallagher (centre) Superintendent of construction operations at DeCew, and George Pearce, Assistant Superintendent. The illustration below shows the new DeCew Falls plant which is located near St. Catharines.



LARGE PHOTOGRAPHS of many of the Commission's new power plants, which are now under construction, were on display at the opening of DeCew's second unit and Col. Drew is shown below studying this camera record.



R. L. HEARN, the Commission's General Manager and Chief Engineer, is seen below at the microphone. Standing next to the Prime Minister, is Harold Hobson, former Chairman of the Central Electricity Board of Great Britain.



"SCURRIED AROUND ON A BICYCLE" MAKING CALLS, PROMOTING HYDRO

**Work Of D. B. Detweiler and
E. W. B. Snider, Recalled
By W. R. Plewman When
Addressing District No. 6
O.M.E.A. Gathering**

Memories of the days when D. B. Detweiler of Kitchener "scurried around on a bicycle" calling on business men in Grand River Settlement to "whip up interest" in the possibilities of Hydro were recalled by W. R. Plewman, Toronto journalist and author of "Adam Beck and the Ontario Hydro", when speaking at the banquet of District No. 6, O.M.E.A. at Stratford on October 1.

With Mr. Detweiler's name, the speaker linked that of E. W. B. Snider of St. Jacobs in the promoting of Ontario's great public ownership enterprise before the days of the late Sir Adam Beck.

DECEW UNIT

(Continued from page 6)

developments like those on the Ottawa River, took many years. Completion of the DeCew development in two years was possible only because of the existence of the earlier unit to which it had been added. But even with that enormous increase in power consumption, declared the Prime Minister, they could maintain all their great activities and supply all their production requirements as long as power was not wasted. He felt sure the people of Ontario would all do their part in avoiding any unnecessary use of lights, of their household equipment, or other electrical accessories so that nothing might happen to restrain the great period of growth which was based on ever-increasing confidence in the future of Ontario.

First DeCew Plant

R. L. Hearn, the Commission's General Manager and Chief Engineer, touched briefly on the history of the DeCew Falls district, pointing out that it had been an active centre of water power since the close of the last century. In 1897 and 1898, he stated, one of the earliest high-head developments in Canada had been undertaken by the diversion of water from the Welland Canal and its conveyance to the escarpment at DeCew Falls. The works constructed at that time, Mr. Hearn continued, formed the first DeCew Falls plant, and for close to 50 years, the station had continued in successful operation. In 1930, the "original plant" had been taken over by The Hydro-Electric Power Commission of

Mr. Plewman, who was introduced by H. O. Hawke of Galt, said that it had taken twenty years to get Hydro established, and Sir Adam Beck had had to cope with innumerable difficulties, and complexities all the way. The forces that arrayed themselves against a public enterprise in those days were enough to frighten even the stoutest hearted, he went on, and if Adam Beck had not been resolute, public-spirited and courageous, he could never have accomplished what he did. But as it was, Ontario was blazing a new trail which was to lead to an amazing future.

Mr. Plewman then traced briefly the history of Hydro from that time to the present. Today, he stated, Hydro was one of the most prosperous public services in Canada and its low rates were the wonder and envy of the whole world.

Ontario, contributing 50,000 horsepower to the Southern Ontario transmission network.

Wartime demands for additional supplies of power made it necessary to provide for increased capacity, continued Mr. Hearn. DeCew Falls site had offered an opportunity for the generation of additional power at a comparatively early date. Construction of a new plant, therefore, had been started in October, 1941, the official opening having taken place in October, 1943. Actual construction of the addition to the new DeCew Falls had been started in October, 1945.

Fine Teamwork

W. Ross Strike, K.C., Second Vice-Chairman of the Commission, declared that the success and strength of Hydro had been achieved by the fine teamwork between the Provincial Government, the municipalities and the Commission. He expressed hope that the "big three" of Hydro would be able to tackle the problems that lay ahead and solve them to the best interests of the people of Ontario.

Others in attendance at the opening ceremonies included Hon. Dana Porter, Ontario Minister of Planning and Development; Dr. Otto Holden, Assistant General Manager—Engineering, H.E.P.C.; A. W. Manby, Assistant General Manager—Administration, H.E.P.C.; Osborne Mitchell, Secretary, H.E.P.C.; R. M. Durnford, President of the O.M.E.A.; J. R. Sullivan, President of the A.M.E.U.; P. B. Yates, Manager of the St. Catharines Public Utilities Commission; and representatives from many other Hydro municipalities.

GALT CHAIRMAN DIES

ROBERT DAKIN, formerly Chairman of the Galt Public Utilities Commission, passed away recently after having been in poor health for more than a year.

"Bob" as he was familiarly known, had been associated with the electrical business in Galt for about 35 years. For some years he had been chief movie projectionist at the old Scott's Opera House, where the Garden of Remembrance is now located. In recent years he had been in business for himself as an electrician.

Mr. Dakin was elected as Commissioner on the local utilities in December, 1943. He was re-elected by acclamation in December, 1945, for a two-year term. This past year he served as Chairman of the Commission.

Probably no Galtonian was better known in fraternal circles than Mr. Dakin. He had been active in the I.O.O.F. since 1912. At the time of his death he was Recording Secretary of Waterloo Lodge, I.O.O.F., and was Past District Deputy Grand Master. He was often the local representative to the Grand Lodge and was Master of the degree team for some years.

While his work with the Oddfellows was his main social interest, Mr. Dakin was active in sports, particularly hunting and golf.

He is survived by his widow, the former Jessie McCallum; two daughters, Mrs. E. Rae Pringle of Galt and Mrs. William Blain of Toronto; three brothers, William, Harry and James; and one sister, Alice.

L. S. O'CONNOR PASSES

LESLIE SIDNEY O'CONNOR, formerly Superintendent of the Thorold Public Utilities Commission, died recently in the St. Catharines general hospital after a brief illness.

Born in 1870 in Mitchell, Ontario, Mr. O'Connor went to Thorold in 1897, fifty years ago, and joined the staff of the Thorold commission, at which time the town's water and light departments were under the control of the council, and it was not until 1909 that a water commission was formed under William M. Hendershot as first chairman. The present public utilities commission, with Mr. O'Connor as Superintendent of the electric system, came into being in 1920.

Although it is said that his primary interest in life was associated with his work at the local utilities, he was also interested in civic affairs.

Surviving are his widow, the former Melissa Farrow; one son, St. Clair of Port Colborne; one daughter, Mrs. Kathleen Stokes of Toronto; five grandchildren and three great grandchildren.

HYDRO PLAYS LEADING ROLE IN ALUMINUM PRODUCTION

Forty Electric Furnaces At Kingston Plant Call For Loads Varying From 700 To 1,800 Kilowatts—Further Expansion Predicted

By Harry M. Blake, Hydro News

In its derivation from the basic ore and in its fabrication and fashioning for commercial use no metal is more dependent upon electric power than aluminum. From smelting to finished product, electricity plays a leading role. Without its services, despite the fact that immense quantities of the material from which aluminum is derived are found in the earth's crust, aluminum would remain a metal to be regarded, perhaps, as even more precious than gold, but economically incapable of conversion into forms which give it so important and distinctive a place in modern construction and manufacture.

Pleasant Characteristics

From the earliest times aluminum salts, which have the pleasant characteristic of being non-poisonous, enjoyed a wide therapeutic reputation as astringents, antiseptics and mild caustics. It was not, however, until 1825 that aluminum as we now know it was produced chemically. A quarter of a century later, Napoleon the Third provided himself with a table service of aluminum, and in his efforts to revive the glories of his uncle's First Empire, is said to have dreamed of furnishing his cuirassiers with breast and back armour of this light and beautiful metal. Just how this would have affected the trend of events in the Franco-Prussian war of 1870-71 one may only conjecture since economically, this undertaking, at the time, was impossible of achievement. And for many years afterwards scientists were baffled by the vexing problem of extracting aluminum from the basic substance at reasonable cost and in serviceable quantities.

Discovery of Process

At long last the evolution of the dynamo made it possible to produce aluminum electrolytically. The discovery of the actual process involved was made simultaneously by Charles Martin Hall in America and by Paul Louis Toussaint Heroult in France. It is a remarkable coincidence that the men who made the discovery at the same time were of the same age and that they both died in the same year—1914.

Thirteen years after the discovery of the electrolytic process the aluminum in-

dustry was established in Canada. The first smelter was started at Shawinigan Falls in 1899. Since that time a tremendous growth and development in the industry has taken place, and the smelter constructed by the Aluminum Company of Canada at Arvida in Quebec is now the largest plant of its kind in the world.

To the smelters comes the bauxite ore, mined in British Guiana, from which aluminum is derived. Crushing, filtering and kiln operations reduce the bauxite to a white powder known as "alumina," which is dissolved in a bath of molten cryolite. The solution is electrolysed in a special type of furnace, and the resultant aluminum is poured in ingots, which after solidification, are shipped to the Company's fabrication plants.

First Fabrication Plant

Toronto was selected for the site of the first aluminum fabricating plant in Canada. A sheet mill was set up on Sterling Road and aluminum sheet was for many years the principal product. As the industry grew new departments were developed, and at the outbreak of the second world war the Toronto plant was also making die castings, sand castings, permanent mould castings, cable accessories, aluminum rivets, aluminum foil and aluminum seals for bottles. During the war smoke bombs, aluminum helmets and various kinds of service kits were turned out. In 1945 all fabricating operations at the Sterling Road plant were transferred to Aluminum Goods, Limited, which fabricates and sells a wide range of household aluminum utensils and other fabricated items of aluminum.

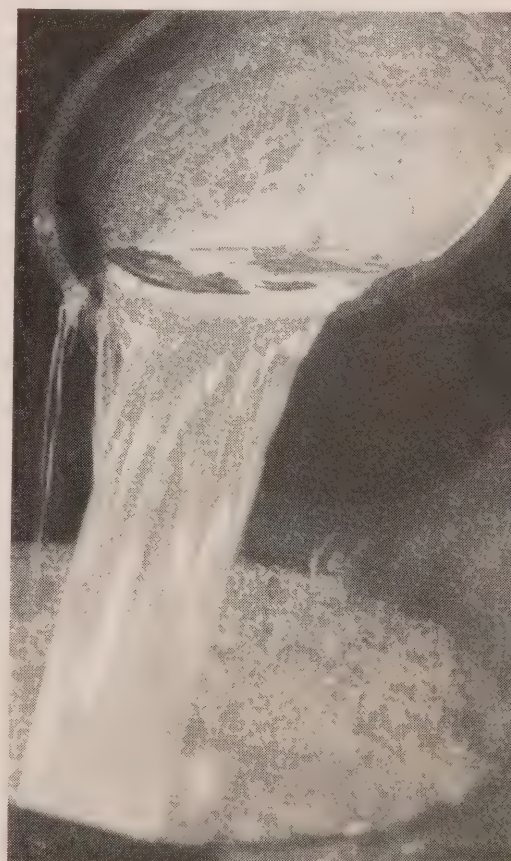
During the war another plant was built by the Company near Toronto at Etobicoke. Here aluminum castings for aircraft parts were turned out. With conversion to peacetime needs the aluminum castings made here are extensively used by the automotive industry, which finds the combined strength and lightness of aluminum effective in reducing the axle load of motor vehicles, thus contributing both to increasing acceleration and to economies in upkeep, gasoline and tires. Castings are also used in the manufacture of cooking utensils, washing machines, vacuum cleaners and many other household appliances.

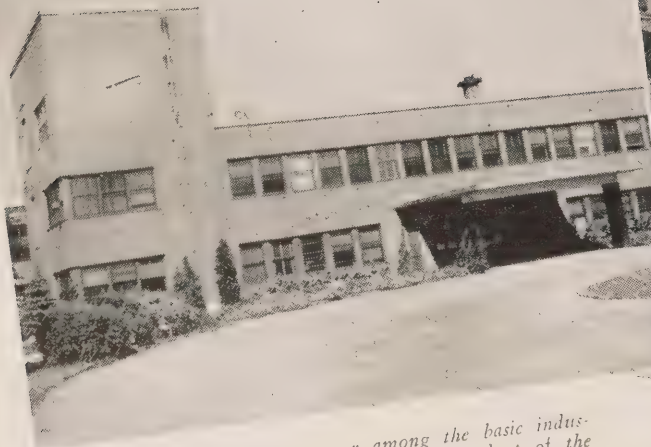
At Kingston, Ontario, the huge plant, erected at the outbreak of the war and since materially extended, now turns out 4,000,000 pounds of aluminum a month, an increase of 1,000,000 pounds over the record monthly production during war years. The Kingston plant makes sheets, tubings, extrusions and structural shapes and is a link between the smelters at Arvida and the over 600 Canadian factories where the finishing of aluminum products of every description is effected.

On a recent visit of Hydro News to Kingston, M. N. Hayes, Works Manager of the Aluminum Company's plant, kind-

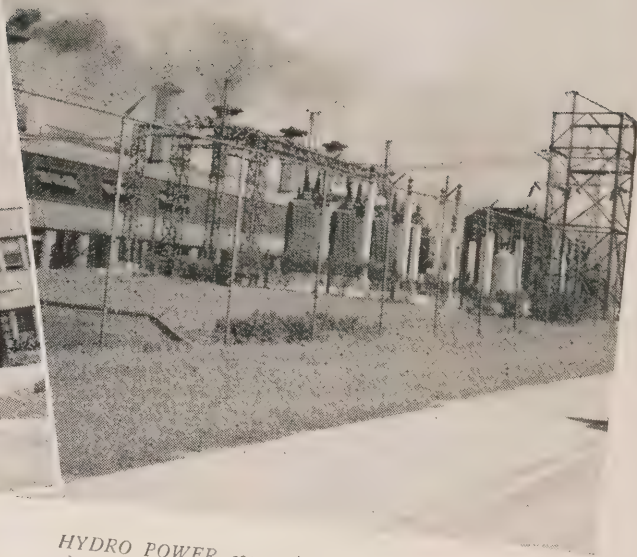
(Continued on page 12)

ALUMINUM IS a "moonlight" metal, but it would be unwise to allow oneself to be moon-struck by its glamorous beauty when it is in the molten state. The furnace men at Arvida have stepped aside to positions of safety as the liquid metal is poured into a large crucible prior to being cast into ingot form for the Kingston plant.

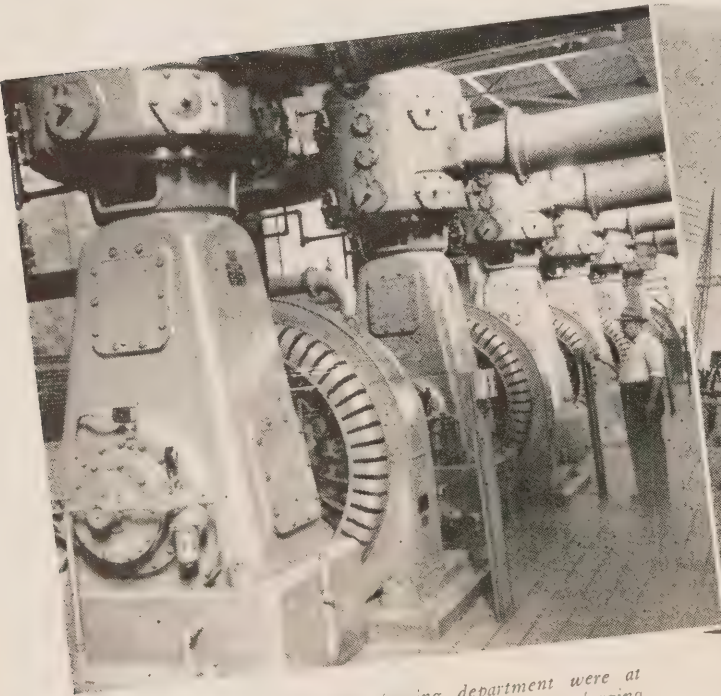




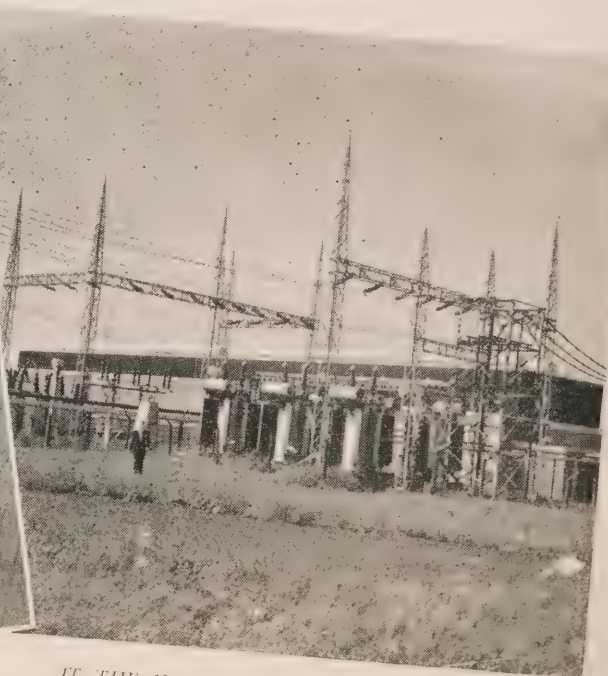
ALUMINUM IS a newcomer among the basic industries. As the entrance to the Kingston plant of the Aluminum Company of Canada suggests, it has started off on approved modern lines.



HYDRO POWER comes in at 110,000 volts. Outside the Company's South plant, 5,000 kva transformers step it down to 2,300 volts. Power then passes on to the control room for distribution.



COMPRESSORS IN the forging department were at their busiest during the war. In 1944 the forging department of the Kingston works attained a record high production of 16,000 propeller blades a month. Kingston aluminum figured in nearly every air-raid.



AT THE North plant, where the forgings are made, the Company has set up two banks of three transformers, with each unit rated at 2,400 kva. As at the South plant, the voltage is stepped down to 2,300 volts before distribution through the control room to the motors.

IN THE Company's little "museum" are samples of aluminum parts used in aircraft construction. Held up is a hammer forging employed as the main hinge for the folding wings of a "Hell Diver." Against the wall are tail wheel forks for a Lancaster bomber. A forged "flap-jack" stand and impact extrusions are seen on the table.



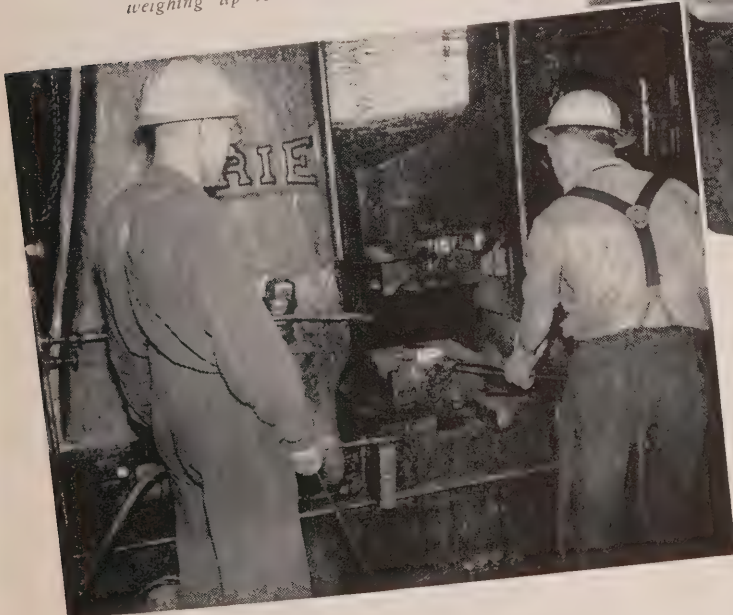
IN HAMMER forging, no chances of accident are taken. The men wear steel helmets, heavy padded gloves and protective glasses. Hammers weighing up to 35,000 pounds are employed.



"ALL THAT glitters is not gold." Aluminum has a beautiful sheen of its own. Left to right—Florence Huber, Gladys Good and May MacDonald are inspecting.



FOLLOWING HEAT treatment and straightening, these aluminum tubes are being given a final inspection before packing and shipping. Girls have proved themselves well suited for this kind of job and are very generally employed.



ALUMINUM

(Continued from page 9)

ly placed his assistant, W. B. Lambert, at our disposal for a tour which proved to be of the greatest interest.

The Kingston plant is divided into three divisions which together cover approximately 300 acres of ground. In the south plant rolling and extrusion operations are carried out. The north plant is set aside for forging; and there is a large testing and research division known as Aluminium Laboratories, Limited. The total cost of buildings, equipment and installations and stocks in storage, is said to be in the neighbourhood of \$20,000,000. During the war years as many as 3,700 workers were employed. Although the present output is greater than in war time, the type of production does not call for so much manual labour. Still, the number of employees working on the three shifts is about 2,200 and with the extensions now being carried out, it is likely that more men will be required.

Apart from certain melting process, every operation in the Kingston plant is controlled electrically. Hydro power is brought in from the Commission's sub-station at Frontenac at 110,000 volts, and is stepped down by transformer banks to 2,300 volts. This power is again stepped down in the plant to convenient operating voltages—for most purposes to 550 volts—and some of it is converted to direct current. Two 250 kilowatt D.C. generators operate the cranes and motors.

The aluminum is shipped from the Company's smelters to Kingston in 20 kilogramme ingots. Stacked in the yards under bright sunlight, they might be taken for silver.

The ingots are melted in the twelve furnaces of the remelt department for the preparation of different alloys. Copper, magnesium, nickel and sometimes iron and chrome are added to the pure aluminum to give it the special quality required for the uses to which it will be put. New ingots of various shapes are cast by these furnaces for fabrication.

Forty Electric Furnaces

If the ingots are to be made into sheets, they are sent on to the hot rolling mills. But first they are pre-heated in electric furnaces. There are 40 of these in the Kingston plant, and, according to the number in operation at one time, they call for loads varying between 700 and 1,800 kilowatts. Passing back and forth between the great cylinders of the rolling mills, the aluminum is flattened down

to plates one-third of an inch in thickness. In cold roughing mills the plates are thinned down to sheets, and in strip-finishing mills these sheets, coming through at a speed of 650 feet a minute, are still further reduced in thickness to meet exact specifications. There are flat sheet mills for a wide type of sheet and high surface polishers for imparting a finishing lustre. Electrically-controlled devices coil the sheets as they come out of the mills, and an apparatus known as a "flying shear," picks up the coils, trims them to the width wanted and cuts them to the desired length. It is operated of course by Hydro power.

Extrusion Process

Tubes, rods and shapes, are fabricated by the extrusion process. The pre-heated ingot, instead of being sent to the rolling mills, is placed in a cylinder and is pressed by an electrically-driven piston through a die which gives the metal the required shape.

Hydro News watched a tube being treated by a "swager" or swaging machine. This puts a point on the tube so that it can be conveniently drawn to a smaller dimension.

There is a very big production of tubing at Kingston. Aluminum tubes are used for electrical conduits, for irrigation, for furnaces and for many other purposes.

War Time Production

The Forge Plant at Kingston was specially built for war time production. It houses a battery of more than a dozen hammers, ranging from 2,000 to 35,000 pounds and a number of hydraulic presses with a capacity varying from 80 to 2,500 tons. As the demand for aluminum forgings, unlike the demand for sheet and extrusion products, has fallen off since the war, this section is much less active than the mill section, and may be said to be taking a "one-shift breather," until adjustments to peace time conditions are completed.

During the war, of course, the Forge Plant was just as busy as the mill, helping to turn out parts for almost every type of airplane used by the R.C.A.F., the R.A.F. and the U.S. Army and Navy Air Forces. All the production of the Kingston plant went to help win the war. It is estimated that 40 percent of the aluminum fabricated for the Allies was produced in Canada and a goodly proportion of this percentage was turned out in Kingston. From the Kingston plant of the Aluminum Company of Canada were shipped hundreds of tons of wing spars for the Spitfires and Hurricanes; large

quantities of aluminum parts for the supposedly "all wooden" Mosquitoes; all of the parts for the Canadian-made Lancasters and tons of parts for the British Lancasters. There was scarcely an air raid on Berlin in which Kingston fabricated aluminum did not figure and from Kingston, too, came aluminum parts for the famous U.S. "Hell Divers" which were so effective in sinking Japanese ships in the war in the Pacific. In 1944 the Kingston plant turned out 16,000 propeller blades in one month, and this was a job for the Forge Shop.

Research Department

Adjacent to the South Plant is the modern building which houses the research division known as the Aluminium Laboratories, Limited. It embodies in its lay-out the chief features of the first laboratory operated by Aluminium Laboratories, Limited, and affiliates at Banbury, England. The scores of scientists and technicians who work there have at their disposal the most modern equipment for systematic applied research. New methods of production are worked out and new alloys are developed to meet an ever increasing demand.

Future For Aluminum

The Works Manager at the Kingston Plant was naturally enthusiastic about aluminum. He believed that as a structural material, where lightness as well as strength is required, it is second to none. He pointed out, with a smile, that it is used for conductors on the thousands of miles of Hydro's long-distance high-tension transmission lines. He stressed the fact that aluminum is friendly to food and was convinced that billions of aluminum containers will be used for packing food within the next few years. And, with all the building in prospect, he was of the opinion that there should be a good market for aluminum ready roofing. But he pointed out that the aluminum industry is absolutely dependent upon a constant and uninterrupted supply of electric power.

In the month of August this year the consumption of electricity at the Kingston plant reached 18,300 horsepower. In August, 1944, a record of 18,800 horsepower was set, but in all other war years the consumption of electricity was less than it has been during 1947. With the extension now being carried out by the Company to meet new business, the demand for power seems likely to increase. And this is further emphasized by the fact that the Company is working up its export business which already accounts for 30 percent of production.



by **DR. R.W.I. URQUHART MEDICAL DIRECTOR**

SINUSITIS

You think you have sinus disease. Well, it may be so but the chances are against it. The troubles that you think arise in your sinuses in all probability have quite a different origin. It has become the fashion to blame the sinuses for much for which they could not possibly be responsible.

The sinuses are cavities within the bones of the face and skull which communicate directly through small openings with the nasal cavities. They are eight in number, four on each side of the nose. The larger ones lie in the bones directly above and below the eye socket. They are lined with the same mucous membrane that lines the nose and throat. This lining is continuous as the sinuses are actually offshoots of the nasal cavities.

Changes taking place in the lining mucous membrane of the nose and throat, therefore, almost always involve the mucous membrane of the sinuses to a greater or less extent. For example, in hay fever the inflammatory reaction in the nose occurs also in the sinuses. An infection such as the common cold in which there is inflammation and swelling of the membranes of the nose and throat produces a similar condition in the sinuses. The small openings from the sinuses into the nasal cavities become smaller because of the swelling and indeed may become plugged.

Deformed Nasal Septum

Involvement of the sinuses occurs the more readily if the nasal septum—the partition between the two nasal cavities—is deformed. A deformed nasal septum results in partial nasal obstruction and favours the retention of infected secretions in the nose. Their spread into the sinuses may be accelerated by sneezing or injudicious forceful blowing of the nose.

Almost every cold, therefore, is accompanied by a certain amount of inflammation in the sinuses or sinusitis and the well known symptoms of the "cold in the

head" are a result of these combined conditions.

The sinus aspect of the infection may become more pronounced if the small openings from the sinuses become plugged with swelling or secretion, thus interfering with the free drainage of these cavities. When this occurs, pain may develop over the sinus areas, the sense of fullness or heaviness in the head increases, and the voice assumes a peculiar dead nasal quality. Loss of the sense of smell and taste already may have occurred at an earlier stage of the cold. These symptoms persist until full drainage begins, usually within three or four days.

Conservative Treatment

Treatment of the acute phase should be conservative. The patient is better in bed and may require simple medication to relieve pain. Heat to the sinus areas is sometimes of value in this connection. Drainage from the nose is assisted by the use of solutions which shrink the mucous membranes, either gently sprayed or dropped into the nasal cavities. Steam inhalations are very often of great value. Surgical measures, i.e., draining the sinuses by puncture, are not advocated. These simple measures plus, of course, careful attention to diet and fluid intake usually result in relief of the condition within a reasonable time. In some cases it may be advisable to use the sulpha drugs and penicillin, but such use should be only on the advice and under the direction of a physician.

When acute sinus disease has been neglected, or where the infection is particularly virulent or the resistance of the individual poor, the condition may persist indefinitely. Chronic sinusitis has set in. In these cases the lining of the sinus cavities becomes altered and there is usually a persistent discharge of foul smelling pus into the nose and throat. Pain is not a characteristic. These patients are, however, far from well. Careful examination by a well-trained physician,

usually with the help of x-rays, is necessary to make a diagnosis. Treatment of the condition is usually surgical and is undertaken by the nose and throat specialist.

Two Main Conditions

These then are the two main conditions in which the sinuses are involved and require treatment. The symptoms and signs in each are fairly definite. They do not include chronic headache, or obstructed breathing or a mucus drip at the back of the throat, or arthritis. Be chary therefore of accepting the statement that such symptoms are the result of sinus disease.

CONCERNING SIR ADAM

Ontario's younger generation is being allowed to forget about Sir Adam Beck and his great accomplishments on behalf of the people of the Province, according to E. V. Buchanan, General Manager of the London Public Utilities Commission.

Mr. Buchanan, when addressing the annual luncheon meeting of the Accounting and Office Administration Section of the Association of Municipal Electrical Utilities, told of how he had questioned young people to ascertain what they knew about the "Father of Hydro". One young lady, he said, was of the opinion that Sir Adam had something to do with Hydro but just what she did not know. A young man was inclined to believe that Sir Adam invented electricity and another little miss had it fixed in her mind that Beck was an educationist because her school was named after him.

QUESTIONNAIRE PERIOD INTERESTING FEATURE AT KINGSTON MEETING

T. A. Andre Is New President Of District No. 1, O.M.E.A.

In order that Hydro municipalities may be fully informed about the activities of their parent body—The Hydro-Electric Power Commission of Ontario—it is customary to set aside a questionnaire period at district conventions, when a panel of Hydro officials answers as best it can any query that may be put to it. As one of the delegates at the convention of District No. 1 at Kingston put it: "Anybody asks anything he likes. It's thoroughly democratic. Outside of parliament, I don't think there's anything like it in any organization I've ever heard of."

"Well, here we are again," smiled T. A. Andre, president of District No. 1, who occupied the chair at all the business sessions of the convention. "I'm going to call upon W. Ross Strike, K.C., Second Vice-Chairman of the Hydro Commission, R. L. Hearn, its General Manager and Chief Engineer, and A. W. Manby, its Assistant General Manager-Administration, to constitute the questionnaire panel."

"That's a pretty formidable sheaf of questions you've got there," laughed Mr. Strike, with a sidelong glance at the dossier on the desk before Mr. Andre. "However, let's get going. What's the first one?"

Questions From Ottawa

It was from the Ottawa commission—a recent addition to the Hydro family.

"Who are the Hydro commissioners?" was the first question.

"Well," smiled Mr. Strike. "Just at present the commissioners are Mr. George H. Challies and myself. We are doing our best to carry on until the new Commission is appointed."

"How do you know," asked Ottawa, "whether the new Commissioners when appointed will approve of the new set-up of the H.E.P.C.?"

"I don't," replied Mr. Strike, with characteristic frankness. "As to that, I can't answer or prophesy."

The Ottawa commission also wanted to know, in effect, if the proposed frequency standardization and its cost had been an actuating motive for the amalgamation of the Niagara, Georgian Bay and Eastern Ontario Hydro divisions.

For this question Mr. Strike had an unhesitating and emphatic "No." The amalgamation of Hydro divisions in Southern Ontario, he went on to explain, had been effected in order that the whole Southern system might function better. He inferred that it had been a move in furtherance of the grid system which Hydro was steadily building up irrespective of whether there would be a standardization of frequency or whether the Commission should continue to facilitate power exchanges through frequency-changer installations.

Provision For Reserves

Lindsay Hydro-Electric System asked why so large a provision for reserves had been made in the thirteenth power bill sent to the municipal commissions. It was explained that the revenues from the sale of power were actually out of line with prevailing conditions—cost of material for construction, improvements, etc.—and that, in the interest of both the municipalities and their consumers, Hydro's present sound financial position had to be maintained.

Another question asked by the Lindsay municipality was whether, when the high voltage line was constructed from the new development at Stewartville, a step-down station would be located in the neighbourhood of Peterborough. Mr. Hearn gave an affirmative answer. There would be a step-down station at Peterborough, but it was not expected that it would be in service until 1949 or 1950.

Maintenance Of Heaters

Peterborough Utilities Commission asked: "Would it be advisable to turn over the flat rate water heaters, when they were installed by the local commissions, to the present owners of the property, so that the maintenance of the heaters would become the responsibility of the new owner, and the present maintenance charge of 11 cents per heater per month eliminated?"

It was pointed out that no legal means had been provided for such action by the local commissions.

From Peterborough also came an inquiry as to the advisability of saving transmission losses on main Hydro transmission lines by increasing the voltages.

Mr. Hearn explained that the whole

question of voltages was now being carefully studied. On certain lines voltages had already been increased. He thought it unlikely, however, that there would be any stepping-up beyond 220,000 volts.

Billing Procedure

In answer to questions put by the Stirling Hydro-Electric System, it was explained that the Commission's practices in billing and "costing" power had developed with the years. They had not, however, crystallized into any hard and fast system, unsusceptible to revision or change. Already the Commission was considering certain aspects which suggested improvements in procedure and the municipalities would be informed before any decisions were made.

Power Situation

At an earlier session of the convention the power situation had been discussed by both Mr. Andre and R. M. Durnford, President of the O.M.E.A. Mr. Andre, speaking for the Eastern Ontario municipalities, suggested that consumers should be given timely intimation of any economies in the use of electricity which they might be required to practise during the coming winter. He felt that any instructions given would have to be mandatory rather than merely suggestive.

Mr. Durnford took a somewhat different view. Referring to the increase in the demand for electric power since the war, he said that he believed that the parochial conception with regard to the use of electricity was fast disappearing, and, just as in other matters affecting the general welfare, so in their use of power people were beginning to see that their own interests were best served by a consideration for the general welfare. The electrical needs of any one district of Ontario were a concern for other districts in this broadly economic sense, and he felt that there was an increasingly appreciative spirit among the municipal commissions and utilities which made up the great Hydro family of what the H.E.P.C. was doing to meet vital and essential electrical needs wherever they might arise.

Officers Elected

At the end of the business sessions of the Eastern Ontario O.M.E.A. convention officers for the year were elected as follows:— President, T. A. Andre, Kingston; Vice-Presidents, H. B. Tully, Picton, and F. H. Plant, Ottawa; Secretary-Treasurer, W. H. Powell, Kingston; Directors—George Baldwin, Lindsay; S. J. Babe, Oshawa, and Dr. A. H. Reid, Arnprior. Auditor—O. H. Scott, Belleville. Representatives from the O.M.E.A.—James Halliday, Kingston, and Morley Duff, Belleville.

SAME LOYALTY, COURAGE, HARD WORK REQUIRED IN FUTURE AS IN PAST

R. L. Hearn, General Manager And Chief Engineer, Pays Warm And Sincere Tribute To Faithful Service Of Hydro Employees—Addresses Twelfth Annual Dinner Of Quarter Century Club Whose Membership Of 900 Represents 24,000 Years Of Service To People Of Ontario—Sixty-Nine New Members This Year

That loyalty, courage and hard work, which have made Hydro one of the finest institutions of its kind in the world, will be required in the future as the Commission goes forward to still greater achievements in serving the people of Ontario.

This, in brief, was the message R. L. Hearn, General Manager and Chief Engineer, brought to the 500 of 900 members of the Quarter Century Club in attendance at the Club's twelfth annual dinner in the King Edward Hotel, Toronto, on October 17.

"You have done a good job. You have built something of which you can be justly proud," said Mr. Hearn in paying a warm and sincere tribute to his audience, among whom were sixty-nine new members, and to the entire membership of this club which now represents a com-

bined record of Hydro service of over 24,000 years.

Hydro today, continued the General Manager, was one of the largest institutions in the Dominion of Canada, and while it was not possible to maintain the same personal contacts with employees, he knew that the Commission could rely upon all members of the Hydro family to co-operate in meeting the problems of the future—in helping supply power which would place Ontario in a position that was second to none in Canada.

Similar sentiments were expressed by Osborne Mitchell, Secretary; Dr. Otto Holden, Assistant General Manager, Engineering; and John Dibblee, Manager of Personnel, who assisted Thomas McFadyen, the president and other officers of the club in making the presentations of

certificates and buttons to the new members.

The ladies' table added a colourful note to the proceedings and this year each lady member received a lovely corsage.

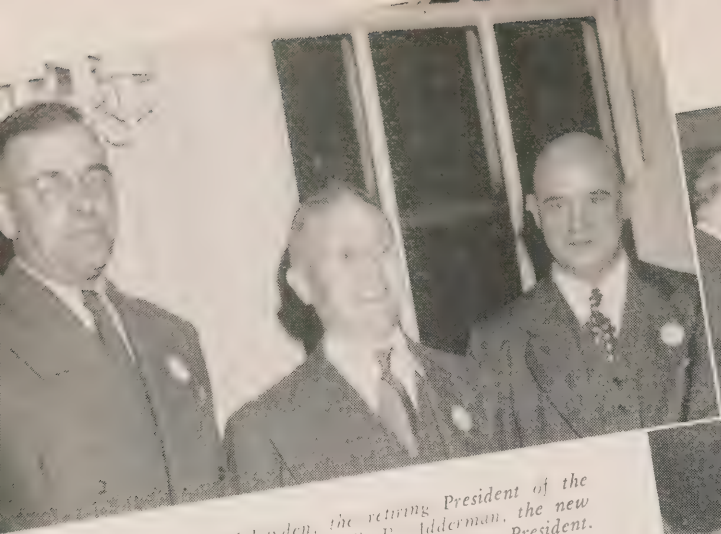
During the evening J. H. Caster, Past President, read the names of those members who had died during the past year, and with lights dimmed the entire assembly paid silent tribute to their memory.

This year's attendance set a new high with 500 present, and after an excellent floor show the programme was climaxed with the singing of "Auld Lang Syne."

Officers elected for the ensuing year are: H. W. Rous, President; E. R. Adderman, Vice-President; S. L. Eisenhofer, Secretary; and E. R. Purvis, Treasurer.



INITIATION INTO Hydro's Quarter Century Club is not hard to take as this candid Hydro News photograph amply proves. John Dibblee, supported by R. L. Hearn (right) and S. L. Eisenhofer, is presenting a membership certificate to Dick Richardson, while W. Rennie (right) and G. D. Ross of Ottawa await their turns.



SEEN WITH T. S. McFayden, the retiring President of the Quarter Century Club (right), are E. R. Adderman, the new Vice President (left), and H. W. Rous, the incoming President.



A WARM handshake from John Diblee, a certificate, and I. K. Nelligan becomes one of the elect. In a moment, H. H. Nighingale and C. T. Oldfield will wear the coveted button.



"IT'S A pleasure." And it undoubtedly was for Mr. Strike to be able to present Mildred Holtby with a lucky number prize. RIGHT, Dr. Holden congratulates S. K. Cheney.



WILLIAM MASLEM and George Jowett (lower left) haven't missed many Quarter Century Club "doings." LOWER RIGHT, the Niagara Falls table at the banquet.





NO LESS than twenty prizes in the lucky draw at Hydro's Quarter Century Club banquet! W. Ross Strike, K.C., is presenting one of them to T. L. Perks.



"YOU'LL NEED a truck to take that one home," laughs George Aram (extreme right) as Lupton Brooks tussles with his prize. Miss Sadie Hartwick seems to be "in the know" as Mr. Strike announces the next winner.



READING AROUND the table from left to right are Edith Anderson, Gertrude McNichol, Tessa MacPherson, Fern Walker, Sadie Hartwick, Edith K. Toule and Mrs. Mary Russell. BELOW, Dr. Holden presents a certificate to Ella Johnson.

AMONG THE recipients of certificates from Dr. Holden, on behalf of the Commission, are Stan Johnson, John Kane, G. Krupp and A. R. Lapere. BELOW, old and new members gather around the festive board.



POWER DEFICIENCY PROBLEM NOT PECULIAR TO CANADA DECLARES HAROLD HOBSON

Britain's Difficulties Ten Times As Great As Those Faced By Ontario Hydro, Former Chairman Of Central Electricity Board Of Great Britain Tells District No. 5 Delegates

"This problem of power deficiency is not peculiar to Canada but is a world problem today," said Harold Hobson, former Chairman of the Central Electricity Board of Great Britain, who, at present is with The Hydro-Electric Power Commission of Ontario, in a consulting capacity on the question of Hydro's expansion programme and the possibility of frequency standardization.

Mr. Hobson, addressing District No. 5 Ontario Municipal Electric Association at the General Brock Hotel at Niagara Falls on September 17, spoke on conditions in Great Britain and compared them with conditions in Canada. He pointed out that during the war, from 1941 onward, the British Government had taken the

view that every ounce of material and every man in the country should be enlisted directly in the task of winning the war. As a result, among other things, plans to provide additional generating capacity had to be shelved, with the full knowledge at the time that it would result in a power deficiency. Today in Britain, he continued, the plant deficiency was approximately 2,000,000 kilowatts. It had to be remembered, of course, he said, that all shortages were governed by the relationship between the demand and the potential supply.

Mr. Hobson pointed out that the problem of power deficiency that faced Great Britain was roughly ten times as great as the one that faced Ontario Hydro.

He expressed the hope that, with the experience he had gathered on the "other side," he might help in working with the officers of the Hydro and thus, he said, "I will feel that I have given you something back for the great pleasure of 'stoking up' very materially for the problems that will be facing me when I get back."

In discussing the problem of power demand, W. Ross Strike, K.C., Second Vice-Chairman of The Hydro-Electric Power Commission of Ontario, said that members of the Commission had had several meetings with the O.M.E.A. executives and special committees of the A.M.E.U. to talk over methods of attacking the problem. At the outset, he said, the problem had seemed easy. They knew they were going to have a demand for power that they could not supply. They thought they could settle it by ap-

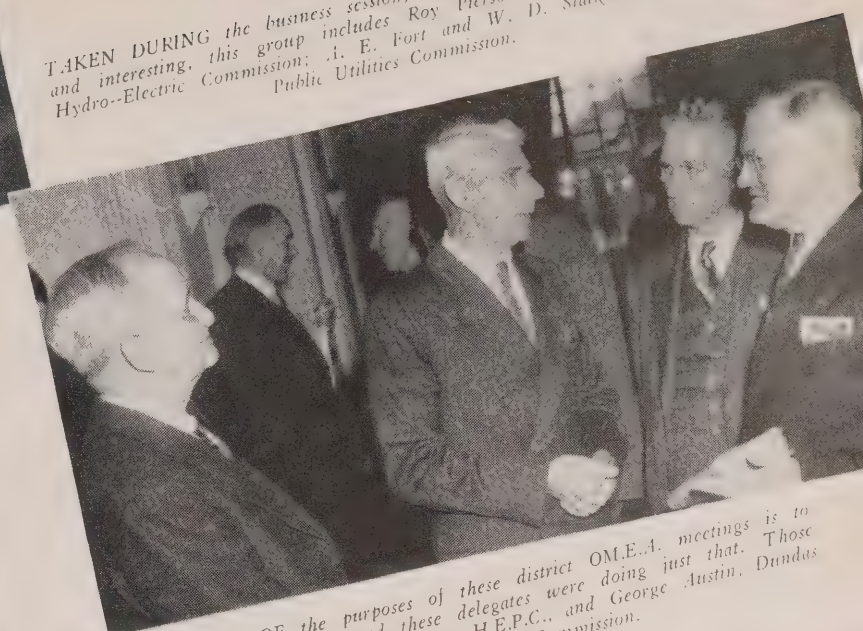
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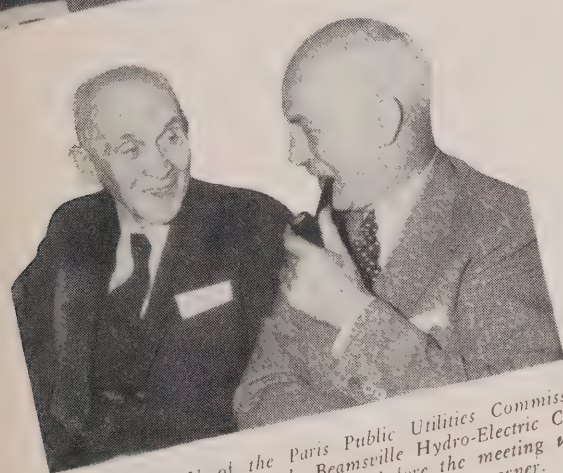
OVER EIGHTY delegates registered at District No. 5 O.M.E.A. convention, and in this group we have George E. Boucher, Paris Public Utilities Commission; R. P. Manning and D. P. Cliff, Dundas Public Utilities Commission; H. Allan Howard, Brantford Township Hydro-Electric Commission, and Ford Murphy, Toronto.



TAKEN DURING the business session, which proved to be both lively and interesting, this group includes Roy Pierson, Brantford Township Hydro-Electric Commission; A. E. Fort and W. D. Stalker of Simcoe Public Utilities Commission.



ONE OF the purposes of these district O.M.E.A. meetings is to "get together," and these delegates were doing just that. Those identified are J. H. Caster, H.E.P.C., and George Austin, Dundas Public Utilities Commission.



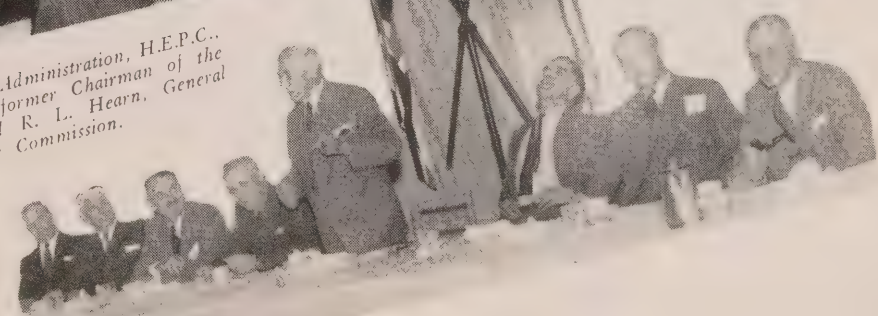
DR. F. BARRON of the Paris Public Utilities Commission (left) and Fred Barraclough, Beamsville Hydro-Electric Commission were enjoying a quiet chat before the meeting when the photographer found them in this corner.

"WAITING FOR the curtain to roll up," (right) these delegates are, left to right, Roy Pierson, Brantford Township Hydro-Electric Commission; C. Fearman and K. R. Baird of Caledonia Hydro-Electric System; Sam Murchin, Brantford Public Utilities Commission.



A. W. MANBY (right) Assistant General Manager-Administration, H.E.P.C., emphasizes a point to Harold Hobson (centre) former Chairman of the Central Electricity Board of Great Britain, and R. L. Hearn, General Manager and Chief Engineer of the Commission.

THE HEAD table included A. W. Manby, Assistant General Manager-Administration, H.E.P.C.; R. M. Durnford, President of the O.M.E.A., who hails from Sarnia; R. Thomson (standing) President of District No. 5 O.M.E.A.; William L. Houck, Mayor of Niagara Falls; W. Ross Strike, K.C., Second Vice-Chairman, and R. L. Hearn, General Manager and Chief Engineer of the H.E.P.C.



POWER DEFICIENCY

(Continued from page 18)

pointing a power controller who had no connection with Hydro. But when they started to look for a power controller there just wasn't one. Any man, who would be the right type of person for the job, would say: "What do I know about power control in the Province of Ontario? The Hydro-Electric Power Commission are the only people who know anything about it. It is their problem, let them solve it as best they can."

In view of that fact, Mr. Strike said, and in looking over the whole field, studying it day after day, and contacting the manufacturers, they had discovered that there was probably a way of meeting the situation which would impose the minimum of restriction on consumers.

Assurance Given

"I think," he said, "that we are all agreed that we are not in favour of controls if we can possibly get along without them. We have been given assurance from the Manufacturers' Association that they will do their utmost to co-operate with us to do everything they can to see us through the power deficiency."

"The Commission also feels," he continued, "that the Municipalities, too, will co-operate and help the Commission through the present situation."

He pointed out that the Province of Ontario had never been as prosperous as it was at the present time and he didn't want anything to disturb the economy if at all possible.

Mr. Strike also stated that The Hydro-Electric Power Commission were sending out letters to the local commissions asking them to help solve the problem, which was also their problem, and to discourage the use of power for non-essential purposes.

Future Developments

R. L. Hearn, General Manager and Chief Engineer, spoke of the power plants now under construction, and also future developments now being considered. He mentioned the Chenux development on the Ottawa River. He said that when the present construction programme was completed they hoped to have an additional 500,000 to 600,000 kilowatts available by 1952.

Problem Of Labour

The General Manager pointed out that work on some of the developments had been held up because of shortages of material such as towers, poles and reinforcing steel, but he said, the situation was easing up a little. There was one other problem, he said, and that was the

matter of labour. Mr. Hearn pointed out that they had not been able to get sufficient labour, either skilled or unskilled, to man their jobs. They had had a very large turnover which had affected the efficiency of the work, and in order to solve that problem, a committee of the Construction Association had met in Ottawa and passed a resolution favouring importation of displaced persons from Europe. They were planning to secure 2,000 men from that source, stated the speaker.

Mr. Hearn said that the Commission

was sending three representatives to Europe to select men who would meet the requirements. In that way they hoped to relieve the labour situation, he declared.

Reorganization Plans

A. W. Manby, Assistant General Manager—Administration, spoke on the reorganization now taking place in the Hydro and pointed out, that in the new structure every employee concerned would be used to the best advantage.

(Continued on page 22)



R. THOMSON of the Paris Public Utilities Commission, who is president of District No. 5 O.M.E.A. and chairman of this meeting, looks over the minutes which secretary George E. Boucher of Paris has prepared.

POWER DEMANDS EXCEED SUPPLY STRIKE TELLS DISTRICT No. 6

Present Situation And Re-Organization Plans Discussed At O.M.E.A. Gathering At Stratford—Seek Voluntary Co-operation In Using Power For Only Essential Purposes

Re-organization of the Commission and the present power situation were among the principal topics discussed by speakers at the O.M.E.A. District No. 6 convention at Stratford on October 1. At the luncheon meeting G. W. Gordon, President of the district acted as chairman, while an official welcome to the visitors was extended by Mayor J. M. King.

W. Ross Strike, K.C., Second Vice-Chairman of The Hydro-Electric Power Commission of Ontario, told the gathering that the general re-organization plan of the Commission was to decentralize in order to get closer to the municipalities

and in doing this, more, and not fewer jobs were being created. The staff had already increased from 5,000 to 12,000. The financial structure he said, was being studied by a firm of chartered accountants. "We hope," he went on, "for a preliminary report during the winter and the municipalities will then have a chance to read it and discuss it."

Definitely Serious

The cycle standardization report, Mr. Strike continued, was in the hands of consultants who were studying the engineering aspects of it. It would then be

examined by the financial experts, who would give a report.

As far as the power situation was concerned, Mr. Strike emphasized the fact that it was definitely of a serious nature. "All our equipment is overloaded and our total demand exceeds our supply," he declared. Already firms with big contracts had agreed to co-operate and the next problem was how to deal with municipal loads. It was felt, he said, that the fair thing was to ask municipal commissions to make a survey of their localities and to determine how non-essential use of power could be curtailed. Commissioners, as leaders of the community, could best explain the situation to their own consumers, he stated. If there were co-operation, he continued, the Commission felt sure that the situation could be met. If voluntary co-operation did

(Continued on page 22)



GETTING INTO the spirit of the thing at the District No. 6 O.M.E.A. gathering at Stratford. Wielding the club is W. Ross Strike, K.C., Toronto, and looking on are S. E. Preston, Kitchener, Bill Herod, Toronto, S. W. Bromley, Kitchener, and G. W. Gordon, Kitchener.

DISTRICT No. 6

(Continued from page 21)

not succeed, action would be taken at the next session of the Legislature to give the Commission the necessary power to allocate electric power.

A. W. Manby, Assistant General Manager—Administration, then discussed some of the factors that had given rise to the present power situation. He pointed out that the demand had actu-



A. W. MANBY, Assistant General Manager — Administration, H.E.P.C., who spoke at the noon luncheon meeting of the O.M.E.A. gathering in Stratford.

ally doubled since 1938. The Commission, he said, had realized during the war that equipment had to be built but the federal government had asked that no building be done. It was thought, too, that there would have been a recession in demand at the end of the war. But any war industry closing down had been more than offset by greater demands from new industries, new houses and so forth.

Programme Of Expansion

Mr. Manby then discussed the new generating stations that Hydro was now in the process of building and the whole programme of expansion and rehabilitation. He gave, also, a brief outline of the new head office personnel structure and the plans for the new regional offices.

W. Roy Harmer, Assistant Director of the Consumer Service Division, in a brief address, assured the O.M.E.A. that the Commission was working out a programme that they hoped would be of real assistance to the municipalities in their efforts to save power.

At the business session in the morning, members of last year's executive were unanimously returned to office for the coming year. They are: George W. Gordon, Kitchener, President for a third term; H. O. Hawke, Galt, Vice-President; A. J. Thaler, Kitchener, Secretary-

Treasurer; Directors: William Corp, Tavistock; F. E. Welker, St. Jacob's; D. E. Kennedy, Guelph; and A. E. MacIntyre, Stratford. F. O. Pelz, St. Jacobs, was named as new director to replace W. P. Kress, Waterloo, who died during the year.

Present Power Situation

Discussion in the morning session centred around the present power situation. A resolution, urging the Commission to use "order methods" to conserve power rather than expensive forms of advertising was moved by H. O. Hawke of Galt and seconded by D. E. Kennedy, of Guelph.

After the luncheon meeting, the delegates had the opportunity of getting a game of golf at the Stratford Country Club. A most enjoyable evening was spent in the Country Club where the programme included a fine banquet, musical numbers, and a speech by W. R. Plewman, author and journalist.

NEW R.O.A. IS OPENED

A further link in the chain of Hydro's rural service was officially forged on November 1 with the opening of Alliston Rural Operating Area, with L. M. Coutts, formerly of Frankford R.O.A., and Assistant Superintendent of Barrie R.O.A., being named Superintendent.

The former Barrie R.O.A., it is pointed out, was too large to operate from one office. Therefore, this area has been sub-divided to form the new Alliston area which embraces parts of Essa, Innisfil, West Gwillimbury, Mulmur, Albion, Adjald, King and Tossoronto townships, and all of Tecumseh township.

The office of the Alliston R.O.A. has been established at 2 Victoria Street East, and the property is now being remodelled into an office, storeroom and garage.

The Alliston area will operate about 200 miles of line and will provide service to 975 consumers.

There are over ninety of these rural operating areas in Ontario, and at the end of 1946 the total mileage of rural lines constructed, or under construction, was approximately 23,700. These lines serve about 178,000 consumers whose aggregate peak load during the winter sometimes exceeded 165,000 horsepower. The capital investment in transmission lines and other distributing power facilities exceeded \$45,000,000, of which nearly a half was represented by the Government grants-in-aid.

During 1946 approximately 1,200 miles of primary line were constructed and service was given to about 16,500 new consumers, of whom 13,300 received service from existing lines. It is interesting to note that during 1946 the use of power in rural areas increased by about 25 per cent.

DISTRICT No. 5

(Continued from page 20)

That was a feature, he said, that was receiving a great deal of attention from the Personnel Division at the present time.

When speaking at the afternoon session, R. M. Durnford, President of the O.M.E.A., expressed appreciation at being invited to the District No. 5 meeting, and said he was pleased to bring greetings from the parent association and from Sarnia and hoped that he would see everyone at the annual meeting next March in Toronto.

Resolutions

Under the chairmanship of R. Thomson, Chairman of Paris Public Utilities Commission, there was considerable discussion during the business sessions on the power supply situation and during the afternoon the following resolution was passed:

"WHEREAS there appears to be a shortage of power prevailing, the prospects for the coming winter will cause this condition to become even worse, and

"WHEREAS we are led to believe that some method of conservation will be necessary, and

"WHEREAS during the war period the 'order method' was used with some degree of success and served the greatest number of people.

"If the Hydro-Electric Power Commission is called upon to again use some method of conservation, be it resolved that this meeting of District No. 5, in session at Niagara Falls, requests The Hydro-Electric Power Commission to again use the order method rather than the various forms of expensive advertising.

"It serves the greatest number of people in the most efficient manner.

"Moved by George Austin, Dundas, seconded by S. E. Thomson, Niagara Falls."

During the afternoon session it was moved by William Watterson, Welland, and seconded by George Austin, Dundas:

"That we ask the Federal Government to remove the 8 per cent sales tax on domestic Hydro bills."

One other resolution was passed:

"That the Chief Inspector of Hydro be asked to amend the clause in the Code Book forbidding plugs and outlets in bathrooms in favour of properly installed three-point rounded outlets for heaters, and regular outlets for electric razors, hair driers, etc.

"Moved by C. S. Rickers, Port Dalhousie, and seconded by S. E. Thomson, Niagara Falls."



NEXT YEAR'S executive for District No. 6 O.M.E.A. sit for their portrait: back row, A. J. Thaler, Kitchener; F. O. Pelz, St. Jacobs; A. E. MacIntyre, Stratford; front row, D. E. Kennedy, Guelph; G. W. Gordon, Kitchener; H. O. Hawke, Galt; and F. E. Welker, St. Jacobs. William Corp of Tavistock, another member of the executive was not available when this photograph was taken.



TIME OFF from business for a game: W. Roy Harmer, Toronto, putts while H. S. Snider, Bridgeport, A. W. Manby, Toronto, W. J. Bishop and D. E. Kennedy, Guelph, look on.



TWO PRESIDENTS get together over a friendly cup of tea at the O.M.E.A. meeting in Stratford: K. M. Darnford, President of the O.M.E.A. and Commissioner of Sarma Hydro-Electric System; and J. R. Sullivan, President of A.M.E.U. and Manager of the P.U.C. in Woodstock.



W. R. PLEWMAN, Toronto journalist and author of the recent book "Adam Beck and the Ontario Hydro," was guest speaker at the banquet held in the Country Club in Stratford.



CORNER OF the head table at the luncheon meeting: left to right, A. B. Manson, Stratford, A. J. Thaler, Kitchener, D. E. Kennedy, Guelph and G. A. Edwards, M.P.P., Palmerston.



A. B. MANSON, General Manager of the Stratford Public Utilities Commission, J. Waldo Monro, Chairman, and Nelson Robinson, Hydro Shop Manager, Stratford.

ELECTRICAL PROBLEMS IN BRITAIN COMPARED WITH THOSE IN ONTARIO

Harold Hobson, Former Chairman Of The Central Electricity Board, Stresses Wisdom Of Saving Power Through Public Co-operation Rather Than By Mandatory Ordinances—Addresses District No. 1, O.M.E.A.—Assisting Hydro In A Consulting Capacity

Electrical problems in the Old Country are in some respects similar and in other respects dissimilar to those which confront us here in Ontario, according to Harold Hobson, retired chairman of the Central Electricity Board of Great Britain, who addressed the luncheon meeting given by the Kingston Public Utilities Commission on the occasion of the recent annual convention of District No. 1, O.M.E.A. Mr. Hobson, who was introduced by R. L. Hearn, General Manager and Chief Engineer of the Hydro-Electric Power Commission of Ontario, is assisting the Commission in a consulting capacity with regard to the proposed frequency standardization, and other problems.

"I am here," Mr. Hobson announced at the outset of his brief but interesting address, "to give what help I can to Mr. Hearn and the Commission on the problems which face them today. As I am only a week in your country, you will not expect me to talk to any extent about your problems as I am incompetent as yet to do so. You will, however, be interested in knowing what problems we have had to meet in England during recent years."

Mr. Hobson went on to say that he was impressed by the fact that although post-war electrical problems in Ontario were serious, they appeared to be far more easy of solution than those which were being encountered overseas.

War Stopped Expansion Programmes

In England, at the outbreak of hostilities, it was decided that all manpower and material must be devoted to winning the war. Further power expansion programmes would have to wait. Everybody knew that when peace came the country would be faced with a very serious power shortage. And that was just what had happened.

So far the problem encountered had been similar to that in Ontario. But, Mr. Hobson pointed out, Britain had a second problem to solve. Practically all the electricity used in that country was produced by coal. "And the output of coal," as the speaker put it, "had shown a regrettable tendency to fall apart." The result of the reduction in the output of

coal was so serious that it had been necessary at one time to close down about half the industrial production of the country. There was a realization in England, however, that power was vital to the country's economy and there were plans for putting in plants within the next eight years which would add 8,000,000 kilowatts to present supply. By 1952, it was expected to span the gap between capacity and demand.

"That gap," said the speaker, "has unfortunately been widened by the shortage of coal. Last winter the stocks of coal for domestic heating ran out, and people turned to electric heaters, of which no less than 3,000,000 were sold. This meant a sudden rise in demand of 1,500,000 kilowatts—which might be described as the last straw which broke the camel's back."

A Wise Thing

Mr. Hobson said he had always thought it a wise thing to try to get people to co-operate without mandatory ordinances.

It was true that people all over the world had got so used to electricity that they had become wasteful of it. He believed, however, that an effective appeal to the public would go far towards reducing that waste.

"You should go a long way first," was the opinion he voiced, "before you plunge into a plan of ruling the people in these matters by government ordinances."

With regard to frequency standardization, Mr. Hobson said that much the same problem had confronted Great Britain twenty years ago as that which called for solution in Ontario today. At that time there were three electrical areas in Great Britain which had been developed at 25 or 40 cycles while services were supplied to the rest of the country at 50 cycles. For the development of the British type of grid system standardization had been necessary and 50-cycle power had been decided upon.

Frequency Standardization In Britain

"We were able to carry it out over a period of from seven to eight years," Mr. Hobson stated. "It was carried through without any dislocation of industry and without the necessity of increasing the price of electricity. There is no doubt that the advantages of standardization have more than repaid the work and outlay."

Each Case On Its Merits

This, however, the speaker pointed out, was not a subject upon which one could generalize. One might be tempted to say that if standardization were to be effected, the sooner it was carried out the better, but each case had to be considered on its merits. What was best for Great Britain was not necessarily the best for Ontario. He was not prepared to give an opinion until he had discussed the pros and cons of the situation with Hydro.

"All For One; One For All" Spirit Stressed In Meeting Power Problems

Fullest Co-operation Of All Consumers Required In Helping Save Power Pending Completion Of New Plants, Delegates To District No. 1, O.M.E.A. Convention Are Told

**By Harry M. Blake,
Hydro News**

Everything possible is being done to speed completion of new power developments now under construction on the Ottawa River and at other sites in Ontario, and efforts are being made to supplement local labour by at least 2,000 workers from the British Isles.

Present power supply problems are being met, insofar as is possible, by additional line construction and rehabilitation aimed at reducing voltage losses and providing more efficient service with the power available. The fullest co-operation of all classes of consumers in effecting reasonable economies in the use of electricity during the winter months, however, will be required pending completion of new power developments.

Since a grid system is being rapidly built up in Southern Ontario with provision for interchange of power loads, these economies are expected to be carried out in the Georgian Bay and Eastern Ontario districts as well as in the Niagara area. In other words, with regard to power loads, it is going to be "all for one, and one for all," with an equitable distribution all round, according to vital and essential needs. (Actually the conservation programme is province wide.)

This, in effect, was the composite picture presented by speakers at the annual convention of the Eastern Ontario division of the Ontario Municipal Electric Association held in Kingston on September 19.

Reviews Construction Programme

A succinct review of what was being done to meet the increased demands for electric power was given by R. L. Hearn, General Manager and Chief Engineer of the Commission. First of all, he referred to the new water-power developments now being undertaken or planned. At Des Joachims the camps had been erected and the roads of access to the power site completed. The concrete plant for the main dam was being built and a separate contract had been let for the construction of the control dam at McConnell Lake.

"Every effort is being made," he told his audience, "to bring the plant into service by the fall of 1950."

The new 70,000 horsepower unit at

DeCew Falls near St. Catharines, Mr. Hearn stated, would help ease the power supply situation. It was expected that the plant at Stewartville would be brought in by September or October of next year. In the north, the contract had been let for the construction of a 58,000 horsepower plant at Tunnel Site on the Mississagi river near Thessalon. It was expected that this development would be completed in about two years when it would be tied in to the Northern system. At Scarborough a frequency changer unit was now in operation and the load demand in the Georgian Bay division was being met. Construction at Aguasabon in the Lake Superior district, where a generating station is being built to supply power to the pulp and paper industry and adjacent communities, was advancing rapidly. And, finally, plans had been approved for the 160,000 horsepower Chenaux development, located, like Des Joachims, on the Ottawa River.

On Hydro power developments and in the construction of the transmission lines, transformer stations and other structural facilities necessary to tie the new power in with the system Mr. Hearn estimated that 10,000 men would be required within the next year or so. With such a short supply of unskilled labour available in Ontario, it had been necessary to look afieid for men, and the Commission planned to send three men to England to see what they could do about securing some 2,000 suitable workers for construction jobs.

"Today," said Mr. Hearn, "we find ourselves 40 per cent short on the supply end of transmission line construction, and we shall try to get help from British mills in rolling the special types of angle material we require for this kind of work."

Mr. Hearn then went on to tell what the Commission was doing to relieve the present power situation. Construction, he said, was about to begin on two new high tension lines, which would help to relieve the overload on existing transmission structures. One of these lines would be built from Masson near the junction of the Lievre and Ottawa rivers to Burlington, and the other from Black Horse Junction near Allandburg to London. Some 15,000 kilowatts in voltage losses would be averted by this construction and the reliability of consumer services would be

vastly improved. The speaker inferred that the reason lines had not been constructed earlier was because of the lack of material. At long last the steel had been obtained and was now being delivered. He added that, whenever materials could be obtained, line rehabilitation was proceeding with the idea of reducing voltage losses and providing the most efficient service possible.

Discuss Reorganization

Referring to the reorganization that was taking place in Hydro, A. W. Manby, Assistant General Manager—Administration, stated that a decentralization policy had been decided upon as the best way of providing effective service. He reviewed the changes that had been made in head office organization, which provided for a General Manager and Chief Engineer, two Assistant General Managers and divisional heads and directors, and stated that, largely on this model, the Commission was planning to set up nine regional offices, seven in Southern and two in Northern Ontario. H. D. Rothwell, as announced in the September issue of Hydro News, had been appointed Special Assistant—Regions with regard to these regional establishments and would be the liaison officer between them and the management.

"Very shortly," said Mr. Manby, "we hope to select the heads for our regional staffs and the other personnel. We believe that this regional form of organization will provide a better service to the municipalities than has been possible under the old system, and that the managers of the regional head offices will be in a better position to get a picture of local problems."

Speaking after the luncheon recess, W. Ross Strike, K.C., Second Vice-Chairman of the Commission, voiced the opinion that with co-operation on the part of all consumers of electricity in Ontario in helping save power, Hydro's problem in maintaining vital services until the many developments now under way are completed, would be immensely eased and no really serious situation would be likely to arise.

With regard to the co-operation required, Mr. Strike stated that the Commission had already been in touch with

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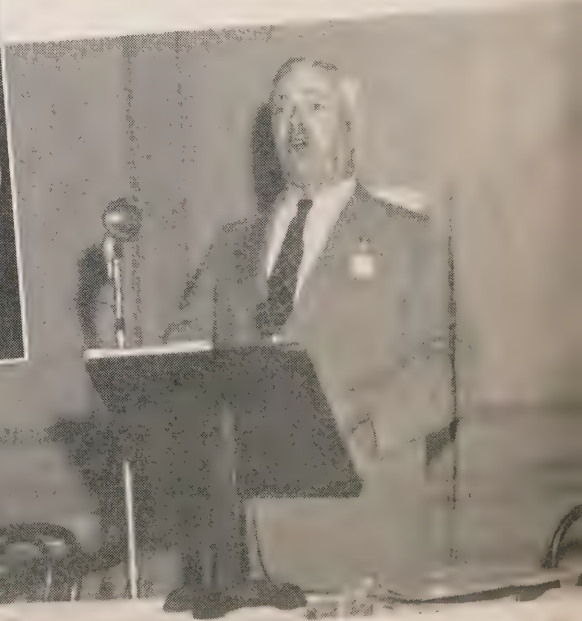
A DISTINGUISHED guest at the recent convention of District No. 1, O.M.E.A., was Harold Hobson, former Chairman of the Central Electricity Board of Great Britain.



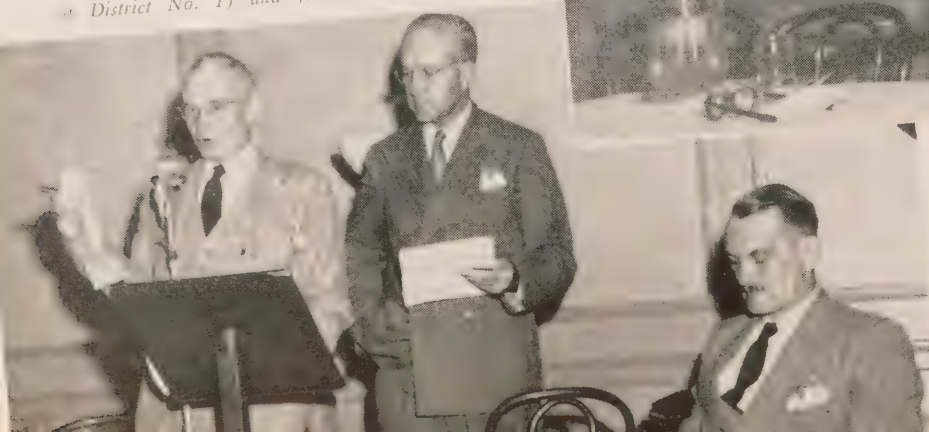
THIS GRAPHIC story Wills MacLachlan is telling had a happy ending for a young life was saved by a line crew trained in Hydro resuscitation methods. Clem Proctor of North York and his friend, Jim Smeaton, are immensely relieved.



KINGSTON'S PUBLIC Utilities Commission stands "four square to all the winds that blow." Left to right are James Halliday, F. I. Parker, T. A. Andre (re-elected President of District No. 1) and James Harris.

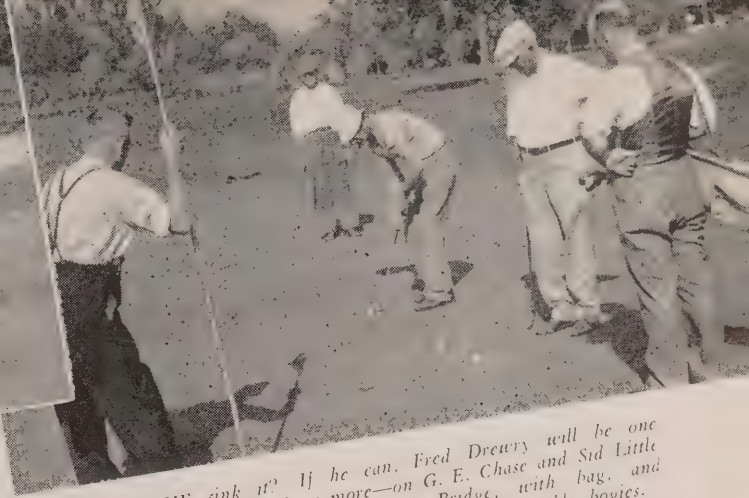


JAMES HARRIS makes an eloquent appeal for co-operation in Red Seal adequate wages programme. BELOW, R. L. Hearn is answering a query during the "Questionnaire" period, while (left to right) W. Ross Strike, K.G., and A. W. Manby are steadying themselves for "disturbances" which may come their way.





EARLY ARRIVALS AT Kingston had time for a round of golf. E. McCracken (left) and A. W. Manby watch George F. Findlay attempt a five-foot putt.



CAN HE sink it? If he can, Fred Dreary will be one up—you said it, perhaps more—on G. E. Chase and Sid Little (holding the flag). G. T. VanBridge, with bag, and Oswald Scott have halved the hole in creditable bogies.



JAMES ROSS of Whitby is telling his confrere, H. L. Pringle a joke that has already been "cracked" in Kingston. O. J. Cherry (centre) Superintendent of Public Utilities in that city of gentlemen and scholars is—well, too much of a gentleman to let on.



AFTER CONSULTATION three doctors have decided that A. A. McLean, Mayor of Arnprior, is not suffering from pernicious anaemia. The medicos from left to right are Dr. D. L. McKearracher and Dr. A. H. Reid of Arnprior and Dr. R. A. Patterson of Kempenville.



"MANY HAPPY returns," is the greeting from W. Ross Swike, K.C., as he presents James H. Moffat of Napance, for prowess at golf. RIGHT, R. M. Durnford, addresses the convention.



DISTRICT No. 1

(Continued from page 25)

executives of the Canadian Manufacturers' Association and that there had been favourable discussions with industries which used large blocks of "at will" and "interruptible" power. It now remained to approach the very large number of consumers in other categories. To cover the field the Commission was sending out two letters. One of these would be addressed directly to the municipal commissions and utilities; the other would be sent to them for distribution to their consumers.

In the letter to the municipalities, he stated, it was pointed out that the demand for electricity now greatly exceeded the existing supply and each commission would be asked to make a survey of the use of electricity in its municipality with a view to cutting down on non-essential employment of power. Local commissions would also be asked to approach manufacturers using power and discuss with them the possibility of relieving the situation by increasing the efficiency in operation of their electrical equipment, or, if agreeable to their employees, staggering the working hours.

In the letter to the consumers, continued Mr. Strike, the Commission was asking each individual to co-operate in using electricity for only essential purposes and to save power at all times.

Need All-Round Co-Operation

"We do not anticipate any catastrophe this winter," declared the speaker. "With all-round co-operation the situation should not even be serious. But we must have that co-operation. Next week we propose to call upon the A.M.E.U. to discuss with them ways and means of securing co-operation from commercial firms which use electric signs and from movie theatres and other enterprises which employ electricity for special uses such as lighting."

Mr. Strike said he felt that the co-operation needed would be voluntarily given. If it were not, then the government had given its assurance that the power act would be amended so that the Commission, in order to ensure essential electrical services, would have authority to allocate supply. There should, however, be no need of such measures, and there would be no real hardship to anybody if everybody played the game.

It was the general opinion of the convention that it would be of assistance to the Hydro municipalities if they were more specifically informed of the power situation and if some uniform method of approaching consumers with regard to power conservation were suggested to them. It was moved by G. F. Findlay,

JOCKO HAS LEFT AGUASABON



CONSTRUCTION CREWS at Aguasabon are mourning the loss of Jocko, the black bear cub, seen in the very candid photograph taken for Hydro News, eating the supper supplied by his guardian, Benny Clark, one of the cooks at Lower Camp. Jocko came in from the woods one day last summer, said "Hello," and was immediately adopted. For awhile his appetite was prodigious. Being omnivorous—the same as we are—he ate everything put before him. Then, one day, his appetite failed him. He began sniffing the air from distant pine woods. No one, however, realized that he was suffering from the fatal "wanderlust,"—not until he disappeared. "It's O.K. with us if he feels like that," say the boys at the camp. But they don't mean it. They liked Jocko.

Carleton Place, seconded by F. H. Plant, Ottawa, and carried unanimously that:

"The H.E.P.C. be requested to send a letter to all Hydro municipalities reviewing the power situation so that the local commissioners will be adequately informed regarding the overall demand for power and the surplus available to meet it, so that they may also deal intelligently with any new demands for power which may arise in their municipalities. And

that because it is evidently necessary to make the most efficient use of power supplies at present available to the users of electrical energy in Ontario, the H.E.P.C. be requested to submit to all Hydro municipalities a list of desirable methods which might be used by the local commissioners for conserving power so that the municipalities may pursue a definite and common policy of power conservation."



"RED SEAL" HOMES

"Red Seal" homes have begun to appear in various municipalities all over Ontario as a result of the province-wide Adequate Wiring programme launched by the Electric Service League of Ontario.

Sponsored by the League in co-operation with Hydro municipalities and the Commission, one-day schools were first conducted in various parts of the Province for the purpose of training Hydro men to be local Red Seal advisers, while there was a good representation of contractors at each school.

The sequel to the training provided in these schools and the educational programme launched subsequently is indicated by the photographs on this page featuring a few of the many Red Seal homes built in various parts of Ontario.



TOP PICTURE: the ceremony of affixing the seal on Guelph's first Red Seal home took place in the presence of local celebrities. While George Austen, Manager of the Electric Service League of Ontario, wielded the hammer the following looked on: Mayor Gordon Rife; Hydro Commissioners F. Garlick, H. Matthews and W. Thain; Electrical Contractor Frank Yates; W. J. Bishop, Manager of the Guelph Light and Heat Commission; J. G. Gow, Red Seal Field Representative and Assistant Manager of the local commission; Roland Dodds, owner of the home; J. F. Mowat, Assistant Manager of the League and carpenters W. Bishop and F. Bishop. The electrical wiring job on this house includes about 100 outlets, panel lighting in the dining room and over the kitchen sink and many other special features. The other Red Seal homes, reading down the page, are in Riverside, London and Owen Sound respectively.



Hydro HOME FORUM by Edithemma Muir HOME ECONOMIST

All ears are tuned for the air of Sir Hubert Parry's bridal march which will be played in Westminster Abbey as Princess Elizabeth enters on the arm of her father on November 20. May this be the beginning of a happy married life for our charming princess and her consort.

With thoughts of those in Great Britain we pen our Christmas wishes to them this week. There will be heavy mail bags going across the ocean this year, so post your greeting cards early.

You've made up your Christmas list? If not, write it soon and then order by phone as many of the things as you can to save time. Your time is valuable too.

Jams, jellies, relishes, are nice for Christmas giving. Your own "make" or a good brand bought on the market is the trick—tuck a bit of holly under the ribbon that holds the wrapping.

Compliment friends who are connoisseurs of cheese by carefully choosing for them a package or two of a fine branded cheese.

It is possible that right in the middle of our early Christmas preparations, a car full of American friends will arrive on their Thanksgiving holiday. So, for the first time in years we will make southern cornbread. It is wonderful, served piping hot.

We may serve baked squash. The halves of acorn squash should be cleaned and put face down on a greased pan. After a half hour of baking in a moderate oven, they should be turned upright, spread with honey and sprinkled with cinnamon.

Chicken pot pie will be the main dish after our guests leave—made shepherd style, that is, with a mixture of mashed potatoes and squash on top.

LIGHT FRUIT CAKE

- 1 cup butter
- 2 cups white sugar
- 4 eggs
- 1 cup milk
- ½ lb. cocoanut
- ½ lb. mixed peel
- ¼ lb. almonds
- 2 teaspoons baking powder
- ¼ lb. glazed cherries
- 1 teaspoon vanilla
- 3 cups sifted pastry flour

Prepare fruit:—Cut cherries in half, blanch almonds and cut peel and almonds finely; add cocoanut and dredge with ½ cup flour listed in ingredients.

Method:—Cream butter; add sugar gradually and beat in eggs. 2. Add vanilla. 3. Sift balance of flour with baking powder and add 1 cup of it to Mixture No. 2. 4. Add prepared fruit. 5. Lastly, add milk and remainder of flour. 6. Bake in 2 oiled and lined cake tins for 1 hour in electric oven of 275 degrees.

Ever add cranberry sauce to mashed sweet potatoes? If you bake them, scoop out centre of each, mash and add a little cranberry sauce before stuffing the shells.

Take thick applesauce and put some in the omelet just before you fold it. It's surprisingly good.

Raw turnips cut in julienne strips, crisped in ice water, pinch-hit for celery curls or olives.

Cooked beets, sliced in seasoned sour cream are good side dishes with fish. But the beets must be very cold.

Tired of pork chops? You'll be pleased with the difference in taste if you place a slice of orange on each before you broil them.

You asked me to spell the name of the powder used to keep the cider sweet

—salicylic acid. One-quarter teaspoon of it added to each jar before sealing will keep cider from spoiling. No need to process—keep jars cold.

Topping for soup! Spread a slice of bread with creamed cheese and cut it in inch squares. Then sprinkle the soup with the squares as it is served. Potato soup is especially zestful with cheese.

Good onion soup is made this way: Cook 1½ cups of chopped onions in two tablespoons of bacon dripping over low heat for 4 or 5 minutes, but do not brown. Add a cup of hot water, salt, pepper, nutmeg and simmer 20 minutes. Stir in 2 cups milk and serve piping hot.

Muffins, "life" size! Muffins shrink from a beating so do not beat the batter. Mix gently until all the ingredients are blended. Grease muffin pans on the bottom only. You want the batter to cling to the sides while baking . . . it helps them grow.

Suet will keep in the refrigerator is the answer to numerous queries. Buy it when you can, grind it, put in glass jar, seal and store in upper part of refrigerator. It may keep three months before it becomes tallowy.

The adage, mushrooms grow up overnight, is not true. We toured an Ontario mushroom farm this week and were surprised at the incubating methods of growing. Right now many "white caps" are popping up after six weeks of isolation in a dark, hot, humid atmosphere. Pickers have an all-night job when mushrooms are ready, since they may become over-ripe in 2½ hours.

Conservation idea: Make use of good canned soups, along with the vegetable juices drained off the potatoes and carrots, to provide soup in a few minutes. This method saves a long electric cooking period.

Lighter Lines



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"When it rains, I can't do a thing with it!"

A crabbed old Quaker died. At the funeral services the few who had gathered were standing silently by, waiting, as was the custom, to pay a tribute to the departed if they so wished. No one spoke. Finally an old man said; "Well, I can say one good thing about Thomas. He wasn't always as mean as he sometimes was."

* * *

That fellow even started out by being self-reliant. When he was a baby he walked the floor alone.



"Courtship, my boy, means running after a woman till she catches you!"

November was the ninth month in the old Roman calendar, its name, as the name of September, October and December being derived from the Latin numerals. The calendar was revised by Pope Gregory so that November became the eleventh month but the same name was kept for it. The Roman Senate was all for naming the months to honour their emperors. The fifth month had been called after Julius Caesar and the sixth after Augustus. In the first century the Senate proposed that they name November in honour of Tiberius but he, himself, refused the honour, merely asking them sardonically, "What will you do if you have thirteen Caesars?" The Saxons called the month Windmonath, or windy month which is appropriate enough in both their country and this one. It was at this time that the Saxon fishermen had to draw their boats out of the water and beach them until spring.

* * *

An editorial assistant on a magazine, who was drawn for jury service, asked to be excused by the Judge. "We're awfully busy just now and I ought not to be away."

"Do you think," asked the Judge, "that you are one of those people the magazine couldn't get along without?"

"No, your Honour" the editor replied, "there is no doubt that they could get along without me, but I don't want them to find it out."

"Excused," said the judge.

* * *

There is nothing so universally commendable than a fine day; the reason is that people can commend it without envy.—William Shenstone.

* * *

The first dawn of smartness is to stop trying things you don't know anything about—especially if they run to anything over a dollar.—Wilson Mizner.

* * *

A speaker who does not strike oil in ten minutes should stop boring.—Louis Nizer.



"It's so simple—I just leave the ice tray outside!"

Old Pop Dinkle had something when he said; "A pat on the back develops character if administered young enough, often enough and low enough!"

* * *

A modern wit writes of the dinosaur who had two brains —
One in his head, the usual place,
The other at his spinal base,
And thus could reason a priori
As well as a posteriori —

* * *

It is said that there are three kinds of lies: lies, damned lies and statistics.



"He's been punished enough, dear—he played hookey all day today before he remembered it was Saturday!"

DESKS STRETCH LEGS SYNTHETIC BANDS SINK AT A.M.E.U. MEETING

Some exciting things are happening in the world of office furniture and equipment these days. For instance, there are all-steel desks whose legs will stretch to accommodate tall folk or "back down" for the comfort and convenience of the very petite secretary.

And speaking of desks, the 'drop-head' typewriter kind is apparently not in great demand now. When closed, this type of working surface is reported to have been rather hard on the Nylons.

Then, for the individual who is interested in binders—that is the kind used in an office—there is a twenty-two ring job which, according to experts, will likely replace its three-ring brother.

This and other information, supplemented by a series of magic-like demonstrations, featured the proceedings at the meeting of the Accounting and Office Administration Committee of the Association of Municipal Electrical Utilities in London on October 16.

At this meeting, the delegates found themselves in a wonderland of office furniture and new gadgets developed by leading Canadian firms and Herbert Smith, an expert in this field, was also on hand to bring the committee up to date on what the office beautiful and efficient should have in the way of equipment.

Tackling his assignment with keen enthusiasm, Mr. Smith went on to tell his audience of the wonderful performance of a small gimlet-like drill which, in one operation, can cut with ease and uniformity through 300 sheets and leave the remaining confetti stored in a plastic handle. There is apparently a great future in business for this office tool which, according to Mr. Smith, will replace the standard one-hole perforator.

There are also better pencil sharpeners which will also make their mark in the office by sharpening only the wood and leaving the lead as long as desired.

At another point, after some interesting remarks concerning the various models of sharpeners and pencils, Mr. Smith swung a new type of binder into the air for all to see. He said that it was known as a variable capacity type which had thongs rather than binder posts and which could hold a 4¼-inch thickness of ledger paper and always present a flat writing surface no matter where it was opened.

The speaker next called attention to a new telephone number index which incorporates interesting innovations. The 1948 model, according to Mr. Smith, will

ON THE PASSING OF UNIVERSITY AVENUE

AN OBITER DICTUM

(Contributed by a Commission Engineer)

It is a pleasure to note that the City is tackling with energy and imagination the provision of an improved traffic artery up University Avenue and through Queens Park. This is an imperative need.

The widening of the road on the east side of Queens Park has been done with care and a minimum disturbance to the beautiful trees of the Park. On University Avenue the general scheme involves a reorientation of the centre line of the road by means of a tapering centre boulevard from Queen to College. This is most ingenious. It will give the northbound motorist the illusion that the Portico of the Parliament Building is in line with the centre of the Avenue; and those leaving the Legislative buildings will have the broad thoroughfare approximately centred in their view south. But what can be said concerning the slaughter of the trees on the west side of the Avenue?

In cities with North-South and East-West orientation the only way in which shade can be provided in the north-south streets during the midday hours is by trees close to the sidewalk. The general northerly trend of the streets in southern Toronto is a little to the west of north and places the sun directly in line with the street during the lunch hours in the

summer when daylight-saving time prevails. The lovely line of well-grown trees on the West side, especially the broad-spreading, umbrella type of elm trees, provided welcome shade for hundreds of pedestrians every day, and even in winter tempered north winds sweeping down the Avenue.

Without impairing the general scheme, eighty per cent of these trees could have been saved by reducing the width of the centre boulevard by about ten feet (five on each side) and making the west side road about 42 feet instead of 45 feet wide. Southbound downhill traffic in the morning is less difficult to provide for than the five-o'clock northbound rush.

The west side shade trees could have been preserved, from the South African War memorial nearly up to the General Hospital, and the grass edge made available would have separated the pedestrians from the pavements and provided room for permanent rows of trees from Queen to College on both sides of the Avenue. The centre boulevard would still have been ample for trees and shrubs.

University STREET may still be an impressive thoroughfare but the unique opportunity to make it one of the beautiful AVENUES of the cities of Canada has apparently been missed.

have keys like an adding machine. When the desired button is pushed, up pops the lid at the correct page and out flies a pad for notes with pencil attached. For the more conservative there is a small tab index finder which fits right in under the feet of the telephone and when not in use is hidden from sight.

Rubber Bands Float

Taking a glass of water in his hand and assuming the air of a magician, Mr. Smith dropped in a handful of rubber bands which he had purchased at a local stationery store. Immediately they sank and it was explained to the meeting that the bands were synthetic. Real rubber bands float, Mr. Smith stated and pointed out also that there were 50 more to the pound.

Green Ledger Sheets

Soft, green ledger sheets which are becoming so popular throughout the business world were a Canadian development, declared Mr. Smith. The story of this innovation began with a university student whose father manufactured office stationery. After periods of study, the lad complained of headaches which he thought were caused by eye-strain. Investigation revealed that he was working under ideal light conditions and the other

factors such as ventilation were also all right.

By coincidence, The Toronto Hydro-Electric System were announcing the results of their research on the cause of eye-strain and its relationship to glare from paper. This started the manufacturer checking his son's trouble and the only answer was that it had been caused by the reflection from the paper he was using.

Up to that time, manufacturers had printed ledger paper on a brilliant white stock, ruled with red, blue and purple lines. After experiments and tests the company developed a soft green shade of paper ruled with lines of a soft colour in the same hue. The idea caught on and the eye-strain trouble was eliminated.

At present the use of green ledger paper has been almost universally adopted and Mr. Smith, quoting an American stationer, stated that the use of white paper for office forms would soon disappear from the markets.

Addressing the meeting, Ray Pfaff, Chairman of the Committee, suggested that study be given to the standardization of forms for public utilities work. This idea will be taken up for further consideration at a later date.

"CAMERADERIE" AT A.M.E.U. GATHERING



R. S. "SMOKY" Reynolds, Manager of Chatham's Public Utilities Commission, appeared in the Lobby of the Hotel in London looking like a real ladies' man. Five reasons for this are Mrs. L. Prichard, Chatham; Ruth Stevenson, Blenheim; Miss A. M. Early, Ridgetown; Verna Bowes, Chatham; and Donna Nash, also of Chatham.

TWO OF the speakers on the programme got together for a minute to compare notes when the Hydro News' candid camera man spotted them. They are H. C. Smith, who was a guest speaker, and D. J. McAuley of the Commission's Municipal Accounting Department.

AMONG THE first delegates to register for the meeting (right) were J. E. Teckoe, Jr., Manager of the Public Utilities Commission, Galt, and "Bob" Jarvie from Windsor. That is C. W. "Chuck" Eastwood of London who is collecting the money.

UP AT the head table (lower right) the camera was focused on J. W. Peart, Manager of the St. Thomas Public Utilities Commission, who proved himself as a musician at the conference, E. V. Buchanan, who spoke on Sir Adam Beck and who is the General Manager of London Public Utilities Commission, and W. E. Wallace of Windsor.

NO THEY aren't the "Deep River Boys" about to sing (lower left) but a quintette of public utility men discussing the latest methods in billing. They are: W. E. Wallace, Windsor; Ray Pfaff, St. Marys; F. Cook, Windsor, Secretary of the meeting; C. W. Eastwood, London and H. L. Summerlee, a commercial member.



HEROISM, INITIATIVE OF 11-YEAR-OLD-BOY RECEIVE RECOGNITION

On October 15 Gerald Lemay, an alert, 11-year-old Canadian boy, stood before approximately 600 of his fellow students at Central School, Gravenhurst, to receive from Premier George A. Drew, the President's Medal and Certificate awarded by the National Safety Council in recognition of the heroism and initiative displayed in saving the life of his 2-year-old brother, Wayne, by artificial respiration.

Living On Farm

Last July 26, Gerald was living on a farm near Barkway, and was left in charge of three younger children, his mother having gone to see his father who was working in Gravenhurst, about 15 miles away. During the afternoon of that day, he missed his young brother. It was later ascertained that Wayne had been playing with a stick at an opening in a well and had fallen into six feet of water. When Gerald found him and pulled him out, he was unconscious, not breathing, and blue. Gerald who had attended S.S. No. 1 Ryde Township, where he had been taught artificial respiration by the Prone Pressure Method,

immediately started to put his knowledge to work, and after a time Wayne started to breathe and cry. Gerald took him home and put him to bed.

This incident was called to the attention of the National Safety Council by Wills Maclachlan, Secretary-Treasurer and Engineer of the Electrical Employees' Association, who in turn, made a recommendation to the National Safety Council in Chicago.

Particularly Honoured

In making the presentation, Col. Drew mentioned that as Prime Minister representing the people of Ontario, and as Minister of Education, he had many duties to perform, but he felt particularly honoured at being asked to present that medal and certificate from the National Safety Council to Gerald Lemay in recognition of his heroic effort.

The Prime Minister emphasized the fact that in school they were taught many things which assisted them in everyday living and some things, which, though seldom used, were of great importance when the occasion arose.

The Prime Minister was loudly cheered by the students when he announced that to commemorate the occasion, he had arranged with their principal, Mr. Nicholson, to give them a half-holiday on the following day.

LEON VAN CLEEMPUT



AN INTERNATIONALLY known authority on gardening, Leon Van Cleemput, who was born and educated in Belgium and whose articles on "Come Into The Garden" appeared from time to time in Hydro News, passed away last month following an illness.

Mr. Van Cleemput, who studied gardening in Italy and Britain, rock gardening in Switzerland and landscape gardening in France, came to Canada in 1930 and joined the staff of the University of Toronto the following year as Chief Horticulturist.

THE HEROISM and presence of mind of Gerald Lemay, an 11-year-old Gravenhurst schoolboy, who rescued his brother from drowning in a deep well, was recognized by the personal presentation by the Prime Minister of Ontario of the President's Medal and Certificate awarded by the National Safety Council. After passing through the lines of assembled school children with G. S. Johnson, District School Superintendent, followed (left) by Wills Maclachlan, Secretary Treasurer and Engineer of the Electrical Employees' Association, and Colonel A. Welsh, Provincial Minister of Travel and Publicity—Prime Minister George A. Drew is seen presenting the medal (with Mr. Maclachlan holding the coveted certificate) and congratulating the happy parents.



U.S. COMMITTEE IMPRESSED BY ST. LAWRENCE RESOURCES

**Addressing District No. 1, O.M.E.A.
Gathering Hon. George H. Challies
Makes Reference To Visit Of
House Of Representatives'
Group To Canada**

There is a possibility that Ontario will not only be assured of the 700,000 kilowatts of electric power which Hydro will bring in through new developments now being carried out or in an advanced planning stage but also of an additional 1,000,000 kilowatts to meet future contingencies.

This was inferred from statements made by Hon. George H. Challies, First Vice-Chairman of The Hydro-Electric Power Commission of Ontario, at the recent convention of the Eastern Division of the O.M.E.A. in Kingston.

Mr. Challies described a trip he had made down the St. Lawrence river with members of the Committee of Public Works of the United States House of Representatives. All members of the committee had, he said, been visibly impressed by the power resources of the

great river and the electricity that could be developed as an accompaniment to the proposed Great Lakes-St. Lawrence Waterways project.

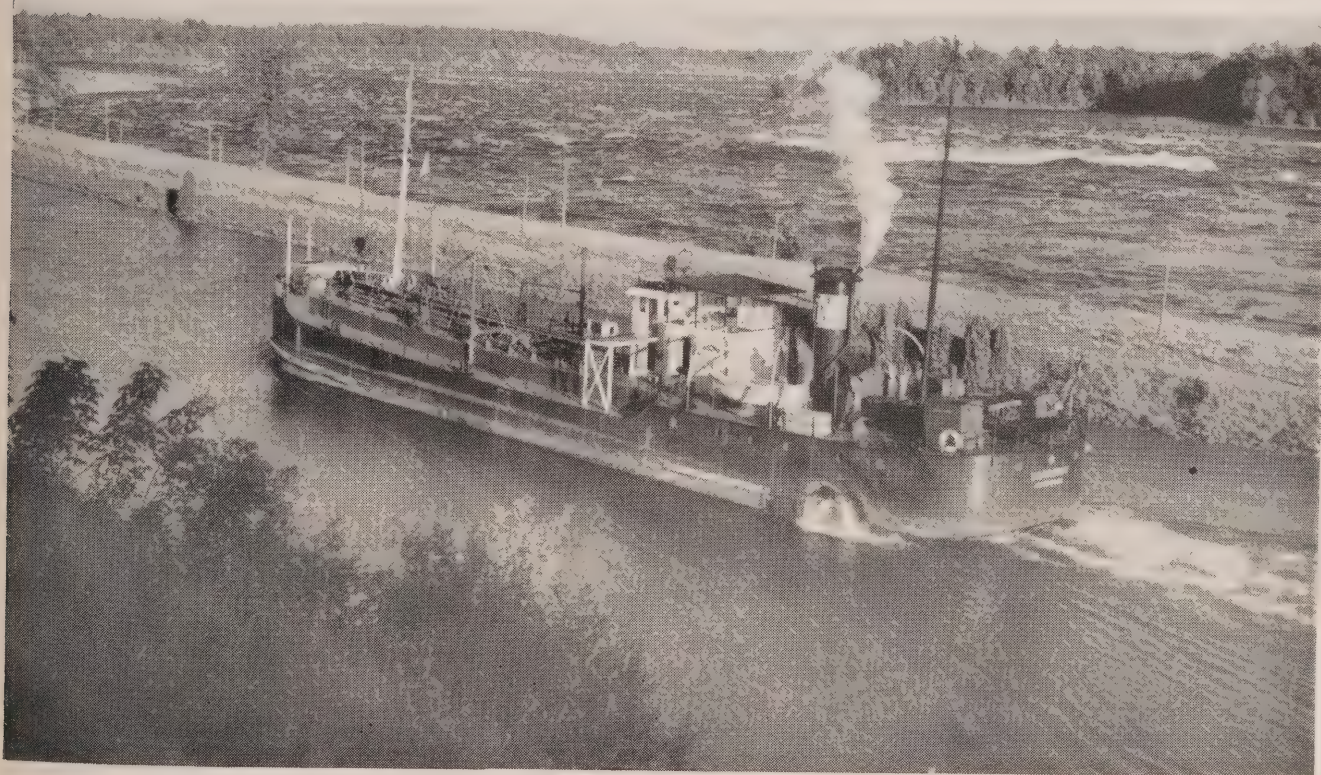
"As we stood on Sheep's Island and saw the tumult of the waters in the Long Sault rapids," said Mr. Challies, "the committee received a first-hand impression of the power that could be developed from this source alone. We are hoping that when the project comes up again for consideration at Washington, what the committee saw here will add weight to the solid arguments that have already been advanced for approval of the scheme."

It was pointed out by Mr. Challies, however, that, if the Great Lakes-St. Lawrence Waterways project were approved by the U.S. Congress, it would probably be two or three years before active construction on electrical developments could be commenced. The developments themselves, since they would be of vast magnitude, might be expected to take five or six years to complete. In

any event, therefore, St. Lawrence power was to be regarded from a long range point of view rather than as a means of satisfying present demands which were being met by the different developments now being undertaken or planned by the Commission.

Rural Programmes

Calling attention to Hydro's rural programme, Mr. Challies explained that, with the prevailing shortages in material, it had been necessary to slow down on line extensions planned while necessary improvements to existing services were carried out. Many lines were being rehabilitated to give farmers the most efficient service and this had included a change-over from 3-kilowatt to 5-kilowatt transformers as well as a stepping-up of voltages in many sections. This year it was hoped to catch up with the backlog of last year's construction programme and carry out some additional line construction beyond that. Some idea of the problem Hydro had been called upon to meet in the rural field might be gathered from the fact that during the past twelve months, there had been more than 17,000 applications from farmers for power—an increase of 26 percent and an all-time record in Hydro history.



IF THE St. Lawrence-Great Lakes Waterways project is carried out, the Long Sault rapids near Cornwall, Ontario, will figure prominently as a new source of electric power. In his address at the Kingston convention of District No. 1, O.M.E.A., Hon. G. H. Challies stated that a committee of the United States House of Representatives had been visibly impressed by this "tumult of water" and all that it might mean from a power development point of view.

SHOULD INSTALL ADEQUATE WIRING DURING BUILDING

James Harris Urges All Hydro Municipalities Support Red Seal Programme

A plea that all municipal Hydro commissions support the adequate wiring programme now being carried out by the Electric Service League of Ontario, was made by James Harris of the Kingston Public Utilities Commission when addressing the annual convention of District No. 1, O.M.E.A., at Kingston on September 19.

Instruction on adequate wiring on the Red Seal plan, Mr. Harris reminded his audience, had been given to Hydro trainees at 14 one-day schools held recently at different centres throughout the province. On invitation from the League, a large number of wiring contractors had attended meetings held in connection with these schools. At Kingston alone some 125 contractors had turned out. Contacts had been made, friendships formed and much useful information passed around. It now remained for the League, with the help of the municipal commissions, to keep in touch with these men and to help them solve their problems.

One of the chief problems wiring contractors would be called upon to face, in the opinion of Mr. Harris, would arise from the failure of builders to appreciate the importance of Red Seal wiring in view of what had been said about the power supply situation and the shortages in household electrical equipment. Contractors must be convinced that the present situation was a temporary one, and that if adequate wiring were not installed as new houses and buildings were being built, consumers would be deprived of the many benefits to be derived from the use of electricity, or, in any event, would be occasioned a good deal of inconvenience through having to re-wire their homes. There was no doubt that electricity was destined to play an increasingly important role in the home, and it would be improvident to permit present conditions to retard the work upon which the League was so actively engaged. Sound sales talk and energetic support of the League's programmes, Mr. Harris felt sure, would break down any resistance there might be to Red Seal wiring and would render a service that would be appreciated before long by domestic consumers throughout Ontario.

"The League", Mr. Harris concluded, "has prepared a wiring contract which is available to anybody. There is also a rural wiring tender which has been drawn up to protect the farmer. What the League is doing to emphasize the real need for adequate wiring must be given the fullest publicity."

AN OPPORTUNITY TO "REMEMBER"

Members of the Ontario Hydro Branch of the Canadian Legion are teaming up with the Ontario Hydro-Electric Club in making an appeal for the voluntary and whole-hearted support of all Commission employees to support a "Parcels To Britain" effort.

While many people in the Mother Land are receiving parcels from relatives and friends in Canada, it is pointed out that there are thousands of austerity-ridden Britishers who do not receive these most welcome and tangible remembrances.

It is also emphasized that many members of the Ontario Hydro Branch of the Legion, not to mention thousands of other Canadian soldiers, enjoyed the warm-hearted hospitality of the British people during the war years. Now, they would like their war-time hosts to know that they are not forgotten as they face another crisis.

Therefore, it has been decided that twice a month boxes will be placed at the front and back entrances to the Commission's Administration Building in order that all employees may have an opportunity of supporting this worthy effort by contributing their dollars, fifty cent pieces, quarters or dimes.

INSPECTION DEPARTMENT STAFF MEET IN TORONTO



ONCE A year, members of the Commission's Electrical Inspection Department staff from various parts of Ontario assemble in Toronto to review the Canadian Electrical Code and discuss other business. At their recent meeting, the Hydro News' photographer was on hand to get this photograph. Personnel shown in the group are: back row, left to right: W. H. Mowatt, E. L. Coomber, J. W. Rose, J. H. Metcalfe, R. K. Tumelty, B. E. Thomas, C. V. Edmunds, O. L. Lowes, F. A. Cardie, Fred Long and F. E. Judd; Centre row—E. E. Lebeouf, A. J. Lang, A. E. Wylie, D. F. Kavanagh, H. K. Clifton, W. B. Legate, J. J. Cleaver, G. D. Ross, A. V. Cassidy, V. B. Bizley, S. R. Waggoner, Jack Martin, A. T. Smith, W. C. Keats, W. D. Brown, R. W. Egles, Fred Sargeant, W. E. Rider, F. R. Whitehead, G. L. Gibson, D. R. Chalmers, and Harry Putnam; Seated—M. J. Hitchcock, Doug. Cronkite, H. J. McCaw, M. J. McHenry, Director, Consumer Service Division; A. G. Hall, E. W. McLeod, A. C. Hanley and J. R. Wainwright.

Hydro at Work

INCUBATOR BABY

Electricity comes to the rescue of many a small, new arrival who has emerged too soon into a harsh and chilly world! The biggest problem in connection with the premature infant is to keep its body temperature normal because the smaller the baby the more difficult it is for it to manufacture its own body heat. That is where the electric incubator, pictured on page two, comes into the scene.

The idea of an incubator for a human baby was first used in a practical way by a Dr. Tarnier in 1880 in Paris. He constructed a box in such a way that the air that reached the baby passed over hot water bottles and through wet canvas and could be kept at a constant temperature. Since then the incubator has been improved, simplified and electrified. This particular model is known as the "Armstrong box;" the simplicity of its construction makes it popular in hospitals, for not only is it easy to manipulate but it is also economical to manufacture and most hospitals can afford to have enough of them to look after all their premature babies.

The box is designed primarily for the maintenance of a constant temperature. It is made of glass and metal, stands on wheels and can be plugged into any ordinary outlet. There is a small electric heater at one end thermostatically controlled so that the temperature can be kept precisely at the degree that is needed. This will vary according to the size and condition of the infant. A pan of water over the heater provides the correct humidity and there is an opening where extra oxygen can be fed in if need-d. However, the box is not air tight and oxygen is only needed in special cases. On the outside of the box are the switches and also coloured lights which indicate to the nurse, at a glance, what switches are on. The safety devices have been tested and approved for the complete protection of the baby.

Before these incubators were in common use the premature baby of less than three pounds and a half didn't stand a very good chance of survival. With their help, however, the Hospital for Sick Children in Toronto reports that they have been able to save infants weighing as little as 24 ounces. When the baby weighs three and a half pounds it is considered well on the way to normal and at five pounds he graduates from the incubator to a crib.

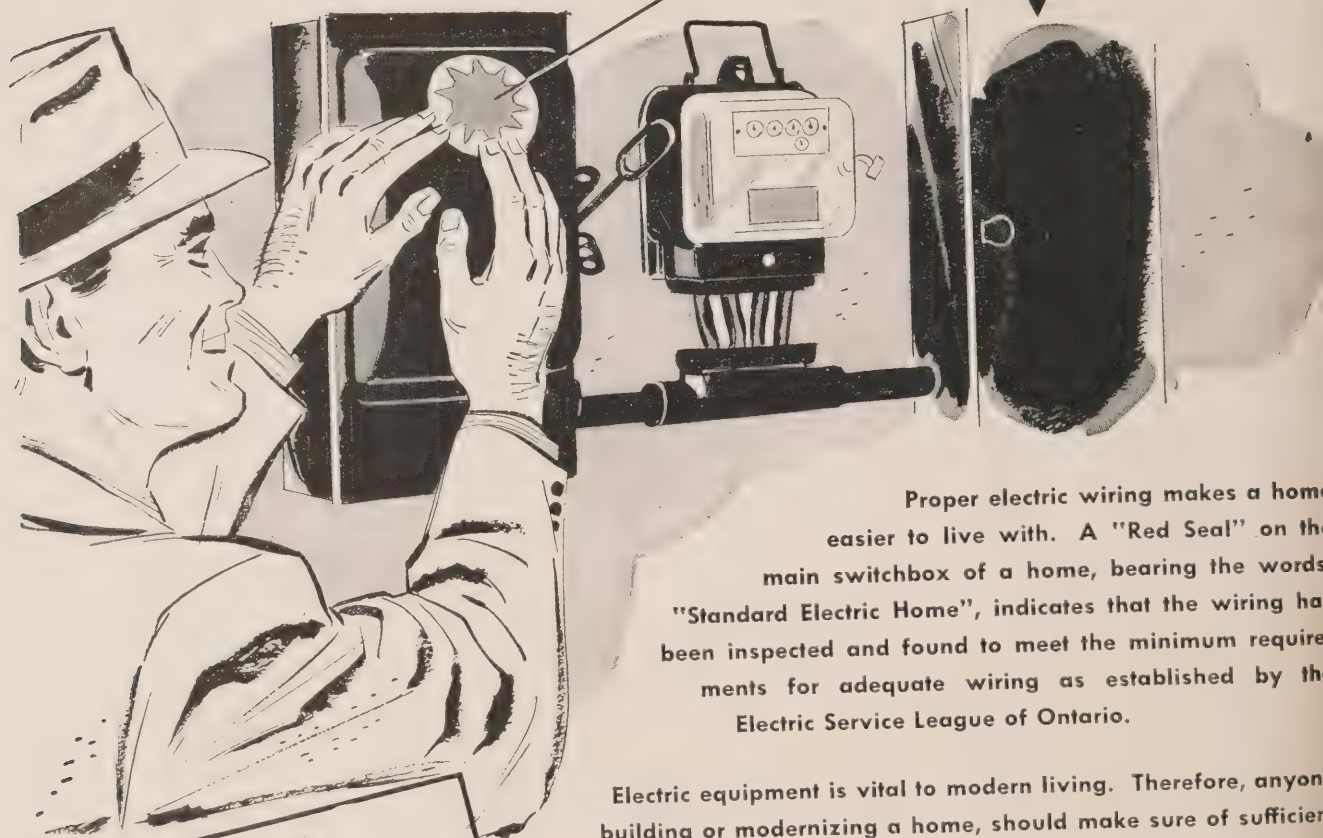
One of the problems the Hospital must worry about is how to get the premature infant from its home to the incubator without letting it become dangerously chilled. Anxious fathers are only too likely to put the baby on the back seat of the family car and hope for the best. In fact a staff doctor recalls that one premature infant turned up on the back of a motor bicycle! However, the Hospital has solved this by constructing a box heated by hot water which is taken out to the home, the baby is put inside, brought to the Hospital and then transferred to the incubator.

The engaging baby in the picture is a "graduate" and only consented to go back into the box as a favour to the photographer.



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 ELECTRIC HOME**



Proper electric wiring makes a home easier to live with. A "Red Seal" on the main switchbox of a home, bearing the words "Standard Electric Home", indicates that the wiring has been inspected and found to meet the minimum requirements for adequate wiring as established by the Electric Service League of Ontario.

Electric equipment is vital to modern living. Therefore, anyone building or modernizing a home, should make sure of sufficient switches, plenty of outlets for appliances and lamps, and a main service heavy enough to handle a range, a water heater, and permit free use of electric labor-saving devices and conveniences.

As a general standard, a 5-room home should have 40 to 50 outlets, counting switches. A 6-room house should have 50 to 60 outlets, a 7-room house 70 to 80. A really well-wired home will have more, but this ratio gives a practical minimum to be provided for.

If you are building or re-modelling now, ask your Hydro for the booklet, "Adequate Wiring for the Postwar Electric Home of Canada."

**THE
 HYDRO - ELECTRIC POWER COMMISSION OF ONTARIO**

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THE FRONT COVER



THIS year's Christmas cover, painted for Hydro News by Jack Heise, depicts one of those delightful spots in rural Ontario which have much of an Old World fascination. The winding, wooden-pole Hydro service line is in character with the surroundings. Darkness is falling as the farmer's boy brings home the Christmas tree. But soon the snow crystals will glitter like diamonds in the light of the moon and stars, giving a fairy-book glamour to the Yuletide scene.

CONTENTS

	Page
Christmas Message	2
Page Three	3
Hydro And Steel	4
This And That	9
Hydro Helps Santa	10
Around The Hydro Circuit	12
Picton	13
Hydro Home Forum	16
Districts 7 and 8 O.M.E.A.	17
Visit To Dearborn	21
Power Conservation	22
F. A. Gaby Passes	24
Dr. R. W. I. Urquhart's Page	25
Lighter Lines	26
Hydro At Work	27
Monthly Load Summary	27
Municipal Loads	28



Christmas Thoughts

Christmas comes to bring again the age-old story of Bethlehem to a still-troubled and anxious world in which momentous events unfold in the destiny of nations and in which men of goodwill strive for common accord and the attainment of peace on earth.

And at this season, members of the great Hydro family join with their fellow Canadians in solemn observance, in joyous re-union with kith and kin and in a re-dedication to the accomplishment of great and historic tasks in the year ahead.

To these people of Hydro, in cities, towns, villages, hamlets and in the far northern outposts, the Commission extends sincere wishes for a joyous Christmas and a New Year of greater opportunity in the onward march to broadening horizons of service.



W. W. Brown



G. A. Halliday



G. B. Mitchell



J. H. Harris

IN TRUE PERSPECTIVE

AUSTERITY, hunger and privation are words which Canadians have read frequently in their newspapers. Today, they do not, however, know their true meaning through the bitter intimacy of actual experience.

At this Christmas season, therefore, there is much for which the people of Canada can give thanks. Once again, throughout this great land, which has been richly endowed by Nature, families in cities and towns, and on farms, will gather together to make merry round the festive board.

True, there are some who may deplore the need for certain curtailments in luxury goods and generally accepted privileges. When viewed from the broad, world-wide viewpoint, however, these enactments come into truer perspective and serve to accentuate the many and bountiful blessings which Canadians still enjoy.

Indeed, the Canadian scene today can best be interpreted by words such as optimism and progress. In Ontario there is no more sensitive barometer of this progress than the demands which are being made for more and still more Hydro power. Industrial expansion without precedent is accelerating the tempo of life in the throbbing cities and towns of Southern Ontario and reaching out far into the rich hinterland of the North. Under the impetus of Hydro power, too, agriculture, mining, pulp and paper as well as a host of other industries are joining in this great march to a new industrial and economic destiny.

In the light of these facts, it is not surprising that Hydro, following a noteworthy record of service to Ontario and Canada during the war years, is today confronted with a critical problem in the supply of power, as a result of the phenomenal growth now taking place.

The modified rationing introduced on November 10, combined with the educational programme launched by the Commission to emphasize the need for voluntary saving of power are two significant and important steps at this time. Intelligent and sincere co-operation on the part of all classes of consumers, along with modified rationing can assure the maintenance of maximum production and employment, pending completion of new power plants.

A high responsibility, therefore, rests upon the shoulders of Hydro consumers in doing their part, individually and collectively, to see to it that power is used for only essential purposes.

The power which is being saved is being used to help speed production of much-needed products

and food, not only for the people of Canada, but to help relieve distress of millions of European people whose eyes are turned hopefully to this prosperous land.

The knowledge that the efforts of so few can contribute so much to so many should be an inspiration to the people of Ontario at this time when free people everywhere unite in both solemn and joyous observance of the Christmas season.

SETTING AN EXAMPLE

IN launching an educational campaign to emphasize the urgent need for voluntary conservation of electricity to supplement the saving effected by modified rationing, the Commission, with the vigilant co-operation of its employees, has been doing what it expects others to do in saving power.

For example, a careful survey was made of the Administration Building on University Avenue, Toronto, to determine the number of lights which could be eliminated entirely during this critical period. At the same time, employees were advised to switch off remaining lights when they were not absolutely necessary. As a result, a saving of approximately 22 per cent has been effected.

Those who may have seen lights on in the building at night may have formed the impression that the Commission was not "practising as it preached." This is an entirely incorrect impression.

These are days—and often nights—which can be best described as "hectic" as the Commission presses forward with the largest programme of construction in its history, involving an expenditure of more than \$250,000,000. Therefore, light used at night in the Commission's building is helping hydraulic engineers, draftsmen and others in the accomplishment of their tremendous tasks associated with the building of new power plants which, in a matter of a few years time, will add close to 1,000,000 horsepower to Hydro's resources. Only those who know from first hand experience the multiplicity of operations which have to be co-ordinated in building a new plant fully appreciate how much more exacting these operations are when it is remembered that projects now under construction are scheduled for completion years ahead of the time required under normal conditions.

This all-out, highly accelerated and high-gear programme may be taken as a criterion of the Commission's determination to play its full part in hastening the time when more power will be available to give still greater impetus to Ontario's phenomenal industrial and economic growth.



CHIMNEYS OF the blast furnaces at the Hamilton plant of The Steel Company of Canada make a striking silhouette against the sky. In the foreground is the "skip" for the dump cars which feed the furnaces with alternate loads of coke and ore. Blast furnaces produce pig iron, which is moulded into billets and shipped as "cold pig," or transferred in liquid state to the steel mix in open hearth furnaces.

By Harry M. Blake, Hydro News

Hydro, which is today being called upon to meet phenomenal demands from industries, mines, farms and homes, is vitally linked with the all-important production of steel.

At The Steel Company of Canada plant at Hamilton, for example, a load of approximately 60,000 horsepower is being used today as compared with a wartime peak of 52,000 horsepower and a pre-war load of 25,000 horsepower.

Years ago, wrought iron was the principal metal of engineering construction. Today it is virtually restricted to chain and bar forgings, representing less than three percent of the world's steel output.

Increasing use of electric power has accelerated steel production since the Bessemer convertor and the Siemens Martin open hearth methods revolutionized the industry.

Organized in 1910

The Steel Company of Canada grew out of the amalgamation in 1910 of five separate companies. Already these organizations had absorbed some 45 "old timer" enterprises, the pioneer among which was the Ontario Rolling Mill Company, established at Hamilton in 1861 for the specific purpose of rerolling wrought iron rails for the Great Western Railway—a broad gauge predecessor of the Grand Trunk. A single cylinder vertical steam engine drove the 20-inch

rollers in the mill and the roughing was done by a Nasmyth steam hammer.

The merger consummated in 1910 actually took in only five companies, but in one or another of these the individual enterprises referred to had been absorbed already.

Further consolidation was dictated by the growing need for unity of administration and greater efficiency of operation. The Canadian steel industry, represented by the companies involved, had to hold its own in a highly competitive market and play the important part demanded of it in the expanding economy of the Dominion.

The new set-up more than proved its

(Continued on next page)

HYDRO AND STEEL

(Continued from page 4)

value in both the first and second world wars. During the second war there was a tremendous expansion at all the Company's plants. At Hamilton new open hearth furnaces and soaking pits were set up. An electric furnace and a new mill, capable of producing as much as 900 tons of plate steel a day, were installed.

Actually more than 750,000 tons of plate were produced during the war years. Much of this steel was used in the building of Canada's 10,000-ton cargo vessels, which played such an important part in meeting wartime requirements.

The Hamilton plant also turned out forgings for more than 5,000,000 shells and processed thousands of tons of tinplate for the containers that carried food overseas to the armed forces and people of Britain. At the Company's other plants aircraft wire, signal wire, galvanized anti-torpedo net wire, high carbon oil-tempered spring wire, heavy chain wire, rivets, mandrel nails, shell primer plugs, firing pins and striker pins were produced in almost incredible quantity.

For two years now The Steel Company of Canada has been able to turn its attention to peacetime activities. It has been faced with the task of catching up on a formidable backlog of production as well as keeping pace with a new and increasing demand for construction metals. Today it is actually rolling more steel than it did during wartime. This is well shown by the power loads which Hydro has supplied.

Peacetime Production

It is at the Hamilton plant the Company makes steel by means of the basic open hearth process. It rolls on the premises steel plate, sheet steel, angles, rods and reinforcing steel. The steel plate is still used extensively in ship-building and also for other purposes where heavy structural steel is required. The steel sheet goes into a wide variety of construction and manufacturing. The angles are used in the framework of freight and passenger cars. The rods and reinforcing steel have a wide range of usefulness in all large-scale building programmes.

Wire rod is also made in Hamilton. Rod is fashioned to convenient shape for further working and sent on to fence manufacturers or to nail and screw factories to be drawn or finished to the specifications of customers. In addition, the company manufactures various types of railroad material such as tie plate, angle bar and spikes.

Present production requirements of the Hamilton plant call for about 1,225,000 tons of iron ore a year and approximately

500,000 tons of scrap steel. The scrap steel is gathered from all parts of the Dominion. It reaches the plant mostly by railway but sometimes by ship.

Coal is brought in by boat. The limestone required for smelting is obtained from quarries near Ingersoll, Ontario. The movement of all this material provides a large amount of business for Canadian carrier companies and is an impressive illustration of how one great industry assists others in providing opportunities for gainful employment.

There is a continuous flow of ore from lakehead to Hamilton during the long navigation season, and two or more freighters are often seen at one time at the Company's docks. The removal of ore or other material from the ship's hold is effected by means of grab buckets manipulated by electric cranes. They form part of the equipment of the three unloading bridges which elevate the ore for conveyance to the stock piles. A big Great Lakes freighter, with the facilities afforded by Hydro power, can be unloaded in between eight and ten hours, and this includes all "cleaning-up" operations.

Hydro Power Loads

Power for the Hamilton plant of The Steel Company of Canada is supplied through the Commission's Gage Avenue substation. This station has a maximum continuous rating of 110,000 kva. It steps down power coming in at 110,000 volts and relays it to the plant at 13,200 volts. A 40,000 horsepower mill load is provided on behalf of the Hamilton Hydro and a 20,000 horsepower electric furnace load on a direct Commission-to-consumer basis. Seventy-five percent of the power received is converted to direct current at the plant itself. All A.C. supply is, of course, broken down to convenient voltages by the Company's own transformers.

Oceans of Water Needed

Tremendous quantities of water are required in a steel plant for the cooling of the parts of blast and open hearth furnaces, for the washing of the gases generated in the various smelting processes, for the bloom and rolling mills and for many other purposes.

At the outset of a tour of the plant made recently by Hydro News, a visit was paid to the Company's pumping station. Here electrical equipment is installed for the pumping of 60,000,000 gallons of water a day—said to be twice as much as is consumed by the entire city of Hamilton! Hydro power is brought into the pump house on 6,600 volt feeders and most of the big motors operate on the same voltage.

Skirting the stock piles, we came to

the coke ovens where coal is converted to coke. The blast furnaces, which provide a spectacle of flame and smoke at cast time, turn out pig iron. Some of this is shipped as "cold pig" to foundries and other steel companies. Most of it, however, finds its way in a molten state to the open hearth furnaces. Here the proper "mix" of scrap steel, pig iron and alloys is added for its further melt into a well-conditioned steel. The furnaces are charged on one side and tapped on the other. Powerful electric cranes, working on either side, handle the furnace loads and auxiliary materials.

An atmosphere of the elemental, provided, no doubt, by the very nature of fire and iron, surrounds the processes carried out here. It gives the furnaces a character which, to a visitor at least, is decidedly awe-inspiring.

Tapping an Open Hearth

The tapping of an open hearth is an impressive, and, to the uninitiated, a rather terrifying sight. At a given signal the furnace crew breaks through a plugged tap hole with a long, heavy steel bar. The white-hot metal pours down the spout into a ladle set beneath. The ladle is an immense steel pot lined with fire-proof bricks. It has a capacity equal to the furnace and receives the entire load at one pouring.

Clouds of vapour arise from the seething cauldron and myriads of sparks fly off in all directions. The slag which has settled at the top of the furnace and comes off last runs over the rim of the ladle into receptacles prepared for it. When the ladle is full, a mammoth hook is dropped from an electric crane. Steel cables take the strain, and the ladle is swung clear.

Although The Steel Company of Canada uses "fuel fired" open hearth furnaces for most of its smelting and "melts," it also employs an electric furnace with a 70-ton capacity. Electricity, while it imparts no additional virtue to steel, is a convenient and suitable form of heat when close controls are required. A load of 20,000 horsepower is required for the operation of this furnace. After watching it being tapped, we stood on a cat walk to observe further proceedings.

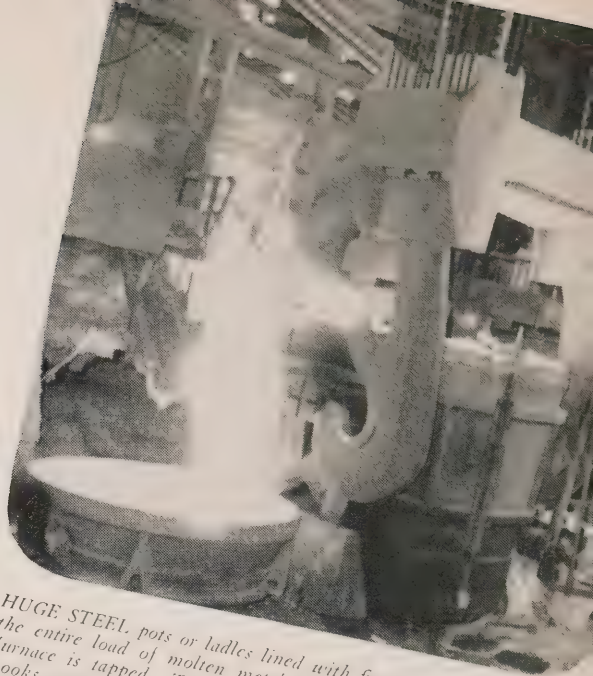
Underneath us on the floor of the building a line of box-like moulds had been drawn up to receive the contents of the ladle. In the grip of the hook suspended from the overhead crane, the ladle passed slowly along the line.

Standing as near as we were, we found the heat a little disquieting, but it proved an excellent conditioning for a visit to the soaking pits. There the solidified ingots are subjected to a really impressive pre-heating to soften them up

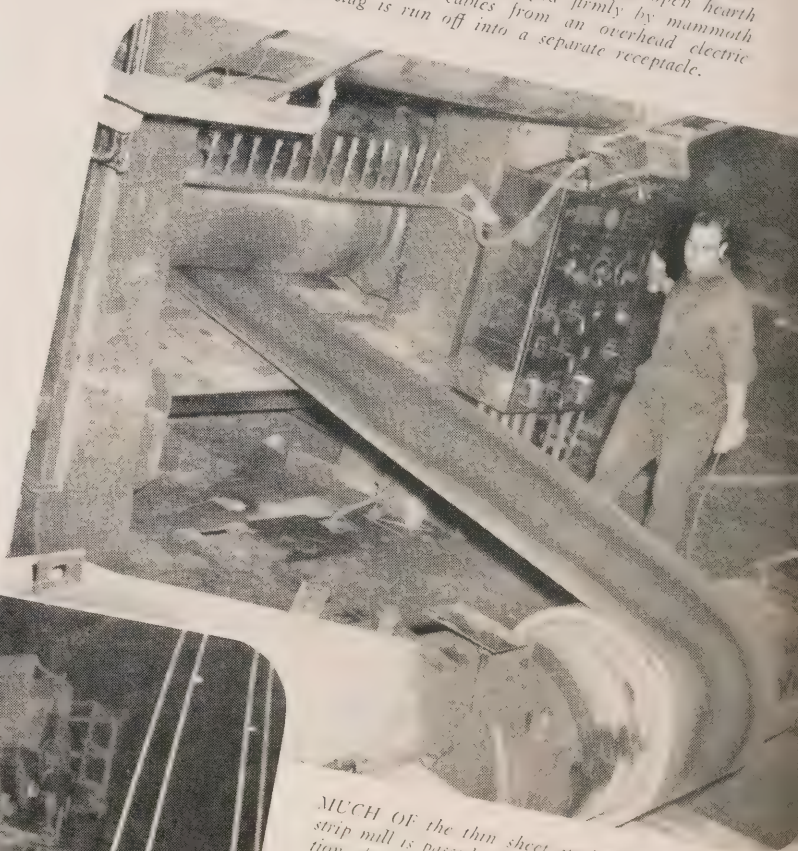
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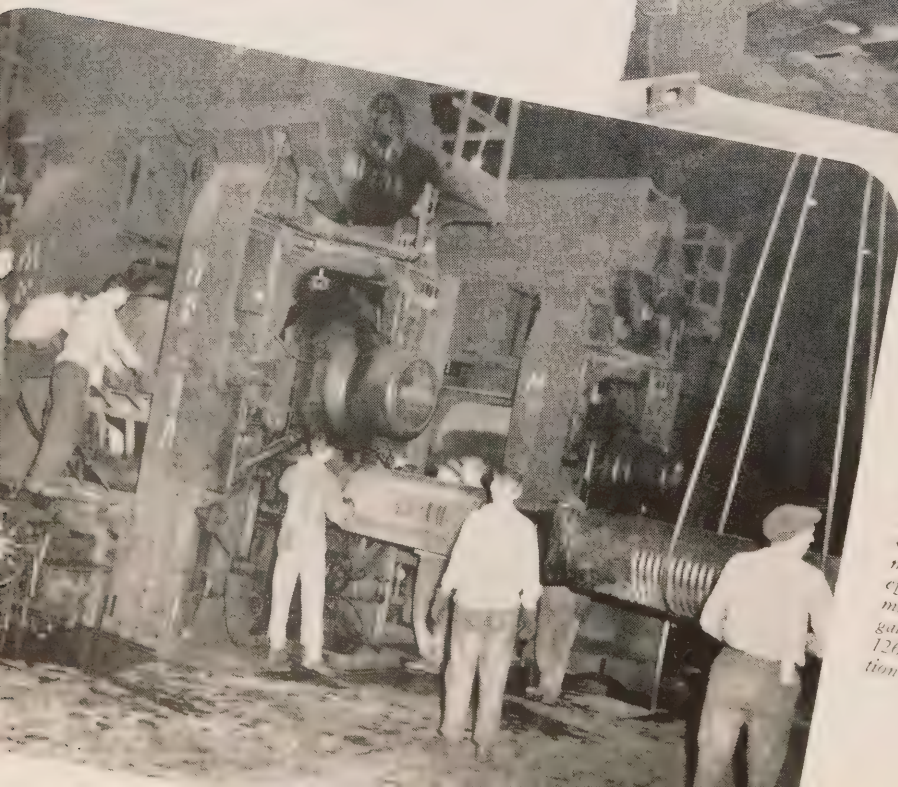
LOOKING DOWN on a "bloom" from the protected power control cabin of the 44-inch mill as the giant rollers break down a pre-heated pig iron for the plate mill. Machinery in the rolling mill is driven by a 7,000 horsepower "master" motor.



HUGE STEEL pots or ladles lined with fire-proof brick receive the entire load of molten metal when a 200-ton open hearth furnace is tapped. The ladle is gripped firmly by mammoth hooks suspended by stout cables from an overhead electric crane. The slag is run off into a separate receptacle.



MUCH OF the thin sheet steel rolled by the strip mill is passed on to the cooler, the operation of which is closely regulated by electrical controls. Continuous coils may weigh as much as 12,000 pounds.



CHANGING ROLLERS on one of the six units of the strip mill. When a roller becomes uneven or ridgy it is taken out and ground smooth. With the assistance of electrical equipment, removal and replacement are usually effected in about five minutes. An idea of the massive solidity of the strip mill can be gathered from the photograph. Approximately 126,000 feet of piling went into the foundation which was driven 78 feet underground.



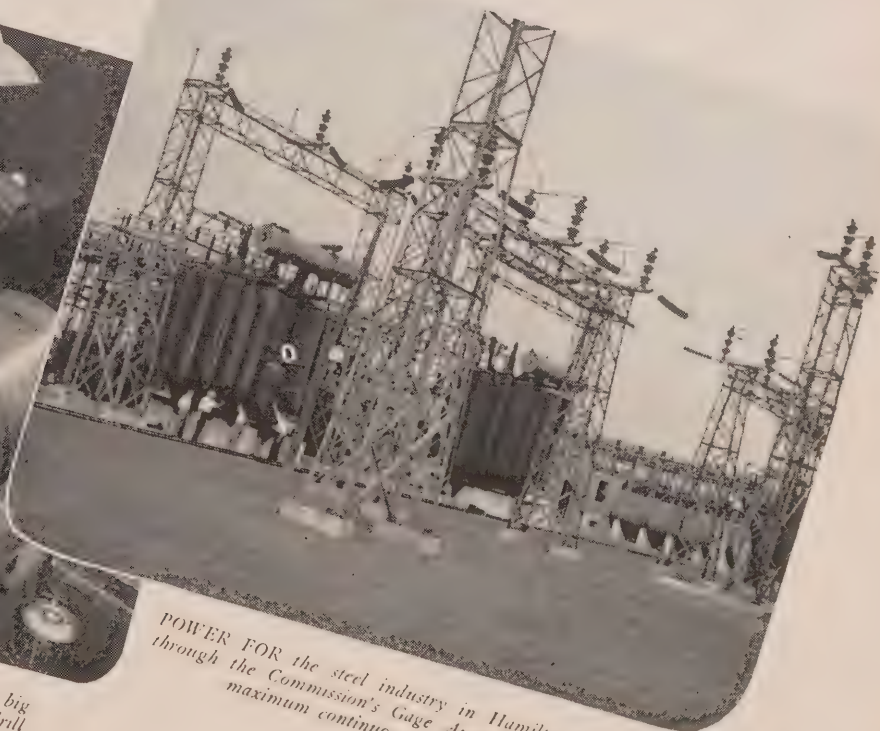
UNLOADING OF iron ore proceeds almost uninterruptedly at the Hamilton docks of The Steel Company of Canada during the navigation season. Grab buckets capable of lifting eleven tons at a single bite are operated through electrical controls on the three unloading bridges which feed the rock piles. Hydro power and modern equipment have so speeded up operations that a 450-foot vessel with a cargo of 14,000 tons can be unloaded in less than 18 hours.



IN THE operating "pulpit" of the strip mill. On duty are Bruce Begin, William Collier, Richard Wallace and Jack McCarthy.



WORKING MACHINERY operated by Hydro power keeps the big rollers of the strip mill smooth and even. A 2 1/2 carat diamond drill maintains a surface tolerance of 1-1000th of an inch.



POWER FOR the steel industry in Hamilton is transmitted through the Commission's Gage Avenue station which has a maximum continuous rating of 110,000 kva.

HYDRO AND STEEL

(Continued from page 5)

for the blooming mills. Operated by Hydro power, trap doors open to receive the ingots as the electric crane brings them in. One gets fleeting glimpses of a little inferno whose fearsome fieriness—the temperature there is 2300 degrees Fahrenheit—it would take a Dante or a Poe to describe.

Breaking Down the Steel

A 44-inch blooming mill—measurements are reckoned between rolls—breaks down the pre-heated ingots for the other mills. It is driven by a 7,000 horsepower motor. The power “cushion” is provided by a 5,000 horsepower motor generator set equipped with a flywheel weighing 75 tons. Many other motors are, of course, employed in the movement of individual parts of the mill machinery. The rolls themselves are lifted by the power supplied by two 100 horsepower D.C. motors. Adjustments of the side-guards which grip the “blooms” and of the tables which shuttle them back and forth are effected by similar equipment.

Altogether, in the blooming and billet mills section there are more than 324 motors, rating from the 7,000 horsepower “big drive” to motors with fractional horsepower capacity. Hydro power, required everywhere in this section of the plant, is stepped down by the Company's own bank transformers which have a rated capacity of 30,000 kva. The Company uses both 25-cycle and 66⅔-cycle motors and two frequency-changer units are installed on the premises. These have a capacity of 5,750 horsepower each.

After the ingots are broken down into flat slabs by the blooming mills, they are sent on to the plate and rod mills. Part of the steel handled by the plate mill is fashioned for heavy structural purposes. The remainder is sent on to the strip mill which was set up by the Company in 1945.

Strip Mill Works Fast

The strip mill is a sort of superior, high-speed sheet mill. It consists of six four-high stands of rolls in series, each stand weighing nearly 1,000,000 pounds. Slabs, broken down to convenient thickness at the plate mill, enter the first stand at speeds ranging from 200 to 400 feet per minute. The first five stands further reduce the thickness and the steel is delivered to the sixth stand for finishing. It leaves this last stand at speeds up to 2,000 per minute on a moving table or “train” which carries it through to a coiling machine.

The mill is capable of producing a hot rolled sheet of 18 gauge or heavier and up to 50 inches wide. Its record performance up to the time of our visit was 1103 tons of steel put through in an 8-hour shift. The foreman was con-

fident that it could do even better than that.

The electrical equipment for this very modern mill is imposing. The main set-up consists of two 9,800 horsepower synchronous motor generator sets; six D.C. mill motors, varying from 3,000 to 3,500 horsepower; a 5,000 horsepower mill motor and a 5,000 horsepower fly-wheel M.S. set. In addition, there are the usual motors to lift the great cylindrical rollers in each stand and other motors to operate the giant shears which cut the steel into strips as it passes out of the last stand. There are no less than 169 three to four horsepower individual motors to rotate the rollers of the travelling table. The latter conveys the sheets to the coiling machine, which of course, is itself electrically driven. The electrical machinery is primarily operated from a control room overlooking the mill. There is also a control panel for each individual stand.

The advantage of this strip mill over the old time sheet mills was summed up in one sentence by the superintendent in charge: “It operates just fifteen times as fast.”

That, we reflected, when steel is

“AUSTERITY” CHRISTMAS

By Harry M. Blake,
Hydro News

*We may be short on candied citron peel
With all exotic fruits in short supply.
We'll have to eat our cake sans cochineal
And on our own indigenous bugs rely;
While our mince pies may lack the ingredients sold
Before new quotas on imports were placed.
And turnip pudding takes the place of old,
Time-honoured “plum,” with spicy sauces laced.
And as for Hydro, this year we are told,
We must take heed lest vital power we waste.*

*Austerity—that's what we call it, friend;
But Overseas they'd envy us our plight.
No need to curb the joys our feasts attend
As round the board we meet in sheer delight.
Electric stoves their useful role may play
Though after cooking we must turn them out.
About the Christmas tree, in glad array,
Our children still can gambol, dance and shout.
And if that new car did not come your way,
You've still the old one left to grouch about.*

wanted so urgently today, is a decided advantage.

The only normal hold-up to the continuous operation of the strip mill is caused by the necessity for changing rolls, which become worn after about eight hours' work. After removal the rolls are sent to an electrically-controlled grinding machine where a 2½ carat diamond drill smooths down the surface within a tolerance of 1-1,000th of an inch.

New Mill Going Up

On its 300-acre property at Hamilton, The Steel Company of Canada is now engaged in laying the foundations for a “cold” mill. This mill will roll the thin steel sheets required for tin-plating. Up to the present, Hydro News was informed, the sheets used for this purpose have had to be imported. With the installation of the new mill, all steel will be fabricated on the premises. That will mean an addition to the number of employees which now figures close to 5,000—nearly double the number on the payroll of the Hamilton plant in 1939. It also will mean a demand for more Hydro power.

#his and #hat

By The Editor

THROUGH THE magic of radio, millions of people throughout the world were able to unite in spirit with the great congregation in Westminster Abbey on November 20 when another memorable chapter was chronicled in the proud history of Britain and her Dominions overseas.

Princess Elizabeth Mary Alexandra Windsor, heiress presumptive to the British Throne, radiantly lovely in her shimmering bridal gown, train and veil, and crowned by a glittering tiara, was united in marriage to a handsome Naval officer, Lieut. Philip Mountbatten, now Prince Philip, Duke of Edinburgh.

To Westminster Abbey where great kings and commoners sleep in vaulted silence with the unknown soldier—where every British monarch since William the Conqueror, with the exception of Edward V, has been crowned—the royal couple came to pledge their troth in the presence of kings, queens, nobility, statesmen and commoners.

Those who have bowed their heads in this hallowed Shrine of Empire, where the history of centuries is etched in stone and oak and in storied window, were deeply conscious of the moving solemnity and hushed adoration which marked this historic occasion.

As the little incidents associated with the joyous climax to this almost fairy-like tale of romance were recounted by the radio announcer, one could sense in his voice a note of awed expectancy and excitement. The word story which came out of the loud speakers seemed to assume thrilling vividness and colour as the deep, reverberating notes of the great organ rolled through the Abbey.

"Praise, My Soul, the King of Heaven."

One could almost visualize the bridal procession moving into the Sanctuary.

There were minutes when the stirring pean of the massed congregation and the crashing of the organ was heightened by the clear, ringing soprano voices of the 36 boy choristers.

"The Lord is My Shepherd"
"Leadeth Me the Quiet Waters By"
It was like a great heavenly choir.

Then there were the commanding almost majestic intonations of the Archbishop of Canterbury and the Dean of Westminster before whom Elizabeth and Philip plighted their troth, repeating the same vows made by the bride's parents 25 years ago in the very same spot.

While the radio conveyed to listeners many deep and soul-stirring impressions of the ecclesiastical dignity and regal solemnity of the scene within the Abbey, it also conveyed a rousing assurance of the place which Princess Elizabeth and all members of the Royal Family hold in the hearts of the British people. From Buckingham Palace and Victoria Memorial down the Mall and Whitehall the massed crowds gave voice to a prolonged acclaim which drowned out the deep, booming notes of Big Ben and the pealing of the bells of St. Margaret's.

The Royal wedding will long be remembered. It seemed to present an opportunity for which the war-scourged and austerity-conscious people of Britain had been waiting—an opportunity to give full expression to these magnificent and glorious traditions which are interwoven with the long history of the Motherland. There were crisp military orders, glistening helmets, flashing swords, prancing horses, a glass coach, and martial music, Westminster steeped in the history of centuries and, above all, the all-pervading spirit of unity, courage and loyalty symbolized by the Crown.

It was a glorious, happy and memorable hour in the lives of Elizabeth and Philip.

It was a great and majestic hour in the onward march of British history.

the story of the Child in the manger . . . when we remember events of the past year . . . its joys and its sorrows . . . a time when we think of Charles Dickens and when we have a visit from the Ghosts of Christmas Past, Christmas Present and Christmas yet to come.

As the Ghost of Christmas Past takes us in spirit back over the panorama of the years we can see ourself as a very young lad running toward two bulky stockings dangling in front of a big fireplace and seeing at the side of the fireplace that big rocking horse we had wanted so much—Santa had remembered! . . . and that big red engine and the building blocks on which were painted the letters of the alphabet, numerals and pictures of animals . . . We remember how proud we were when we first spelled out our name by placing the blocks in correct sequence . . . There was another Christmas . . . the time we got the big sail boat with the billowing sails . . . We remember how that trim craft cut through the water and how the wind blew on our face as we stood . . . on the shore with a string in our hand! . . . Still another Christmas . . . when Santa brought us our first cricket set and soccer ball . . . Then there was that memorable Christmas Eve—a postcard Christmas Eve—when thick snow flakes were falling on a deep carpet of white outside . . . we were sitting in front of a crackling log fire listening to a reading of Charles Dickens' "Christmas Carol" and other Christmas stories . . . Then the Ghost of Christmas Past bows himself out of our bedroom, leaving us to our meditations.

Our thoughts are interrupted—The Ghost of Christmas Present is with us . . . We receive him with mixed feelings—But he is not to be denied . . . He shows us that things are different . . . that even at this joyous season, there is sadness, distress and uncertainty all around and that the greatest happiness can be found only through an enduring faith in the four freedoms and in a

CHRISTMAS! A time of the year when we sing carols and recall again

(Continued on page 21)



town, and his jovial laugh rings out, spreading a feeling of cheerfulness and goodwill. The young lady on the right displays some of the toys which Santa Claus will take out of his enormous bag on Christmas Eve.



HYDRO HELPS SANTA MAKE LOTS OF TOYS FOR GIRLS AND BOYS

By Grace J. Carter,
Hydro News

All Santa's toys are not made by the elves, gnomes and other folk of the story book world in his North Pole factory.

There is, for example, one of his factories right in Toronto where the "elves" and "gnomes" have the help of Hydro in making toys for "all the good little girls and boys." And these toys! Well, many "little mothers" will have starry eyes on Christmas morning when they see the lovely dolls and soft brown teddy bears that Santa Claus has left them, and their little brothers will be just as excited and pleased with the bright coloured plastic automobiles and trucks found under the Christmas tree.

Beautiful dolls of all types and sizes, teddy bears, pandas and plastic toys of all descriptions, including streamlined sedans and tiny pieces of household furniture are all made at Santa's Toronto toy factory.

Hydro News recently had the privilege of visiting this well-organized plant and saw the various operations that go into the making of dolls and plastic furniture.

Oddly enough, in some respects, the doll section took on the aspect of a chamber of horrors with torsos, arms,

and legs piled up in huge wooden containers, and heads lined up on racks. The explanation was simple enough, however. It was not nearly as gruesome as it first appeared. It seems that when the various parts come out of the moulds they have to be smoothed off by an electrically powered grinding machine before they are assembled.

Life-Like Appearance

The dolls are made of a wood flour composition that is later sprayed with flesh coloured paint which imparts quite a life-like appearance.

Girls in the coiffure department were found to be particularly busy carrying out the latest trends in "hair dos." The tiny heads of hair were combed and brushed as carefully as milady's tresses.

It is no wonder when the dolls are finally turned out with their rosy cheeks, long curling lashes veiling eyes that open and shut, frilly dresses and pert wee hats that the little ladies who receive them are more than anxious to treasure and cuddle them.

The next section visited was where the big brown teddy bears are "sewn up." This is accomplished by using special fur machines, which differ from the regular sewing machine in that the

fur is sewn between two disks rather than by a straight needle. All the machines are, of course, driven by electricity.

Plastic Toys Popular

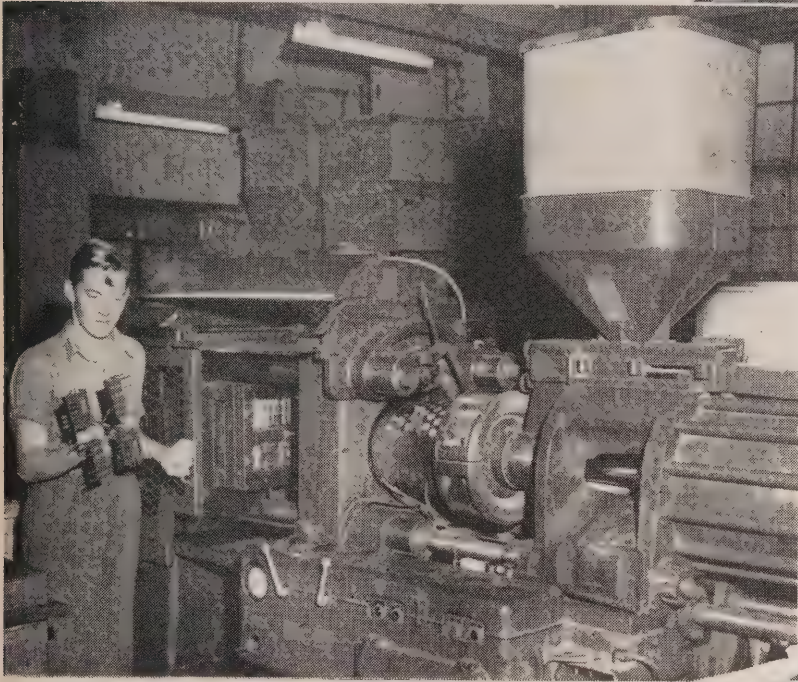
In recent years, according to reports, plastic toys have proven very popular. It may be because they are light in weight and can be easily washed. Besides, they come in such pretty colours! This company manufactures a large number of these toys such as tiny household furniture which is usually displayed in six room compartments, motor cars of all descriptions, tractors and other farm implements, ukuleles, saxophones and all sorts of things. The moulds for these toys are designed and made in the factory's toolroom.

When these dies are ready they are used in an injection moulding machine that is operated by a 25 horsepower motor. Briefly the operation is this: the plastic crystals or powder is put in a hopper and from here fed into a heating chamber where it is heated to a temperature of approximately 500 degrees Fahrenheit. At this temperature it is then injected into the mould and comes out a toy that any youngster would be proud to own. The whole process is accomplished in a matter of seconds. As some of the toys are very small, the moulds are so arranged that several pieces can be produced at one time.

There are many other operations throughout this factory where electricity is used which undoubtedly speeds up production. This is particularly important at this time of the year when everyone is trying to give Santa Claus as much assistance as possible in order that no little boy or girl will be forgotten on his long trek on Christmas Eve.



THE ASSEMBLY lines are kept moving and in this illustration can be seen a few of the plastic toys that are made in a Toronto toy factory. The girls are testing blue and yellow racing cars, streamlined sedans, trucks and farm tractors.



THIS INJECTION moulding machine is operated by a 25 horsepower motor and produces in a matter of seconds various types of plastic toys. The operator has just taken out four pieces of tiny dining room furniture.



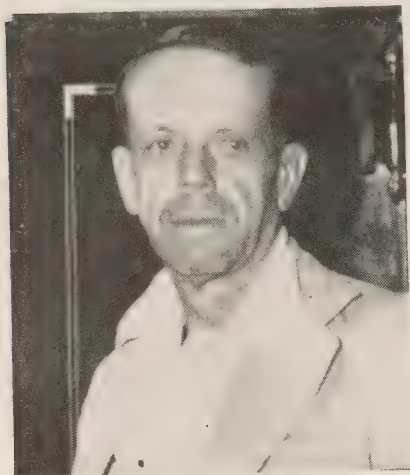
NOT AS gruesome as it might at first appear. These are really dolls' heads in the making and they are being given a "healthy complexion." The operation is known as "cheeking."



BIG BROWN teddy bears like the one shown are sewn up between two disks rather than by a regular sewing machine. These special fur machines and their regular sewing machines are, of course, electrically driven.



COMMISSIONER BLAKELY



Descendant of United Empire Loyalists who settled in Prince Edward County, HARRY GORDON BLAKELY, a Commissioner of the Picton Public Utilities Commission, was born in 1887 at Point Traverse. His first venture into public affairs was in 1920, when he was elected to town council. After serving for three years, he was returned as Deputy Reeve in 1922. The following year he became reeve, and in 1924 Mayor of Picton. After this, he confined his activities to the school board and served on the board for about fifteen years. Just this last year, he decided to once again stand for public office and was returned as Hydro Commissioner.

Being a hardware merchant and an electrical contractor by trade, Mr. Blakely is familiar with the electrical requirements of the town and is an ardent booster of Commission activities.

He is married and has five sons, some of whom assist in the business. Mr. Blakely is a charter member of the Picton Rotary Club and could well be called the outdoor type of man.

HE BUILDS BOATS

Tall and tanned, H. B. "Burt" Tully, a home-town boy, has been serving on the Picton Public Utilities Commission almost continuously for twenty years. For over half a century Mr. Tully has been in the men's wear business in Picton

and has made a host of friends in and around the district.

An ardent golfer, he has been secretary-treasurer of the Picton Golf and Country Club for many years, and has also been actively identified with the Bay of Quinte Yacht Club.

It would be an understatement to say he builds boats for a hobby because just recently he constructed a magnificent 32-foot cruiser with a mahogany hull and powered by a racy marine engine. This boat, named after his grandson, Peter Allen, is capable of touching the 40-mile-an-hour mark and it is a familiar sight to see Burt Tully standing in the front cockpit as he speeds down the bay.

PICTON'S MANAGER

Born in Caithness, Scotland, William Tait, the manager of Picton's Public Utilities Commission, has almost grown up with the electrical business, having been associated with administrative duties in this field for thirty-five years.

His primary education was obtained at Wolf Island, which is just outside Kingston, and later he took a correspondence course in engineering. It was back in 1912 when he became associated with the utilities in Picton and in 1916 he was appointed manager. Three years later, Picton became a member of the Hydro family and Mr. Tait was retained as manager, a position he has held ever since.

He is keen on boating and is a member of the Prince Edward Yacht Club, while he also enjoys gardening and has made a specialty of growing tomatoes.

DR. GRANT RECEIVES M.B.E.

DR. DONALD K. GRANT, resident physician at the Commission's Des Joachims development, was recently awarded the M.B.E. for meritorious service with the R.C.A.M.C. during the war. The ceremony took place at a special investiture by the Governor-General in Convocation Hall, University of Toronto.

Dr. Grant was born in 1916 and was educated at the University of Saskatchewan where he received his Bachelor of Science degree and at the University of

MAYOR NETHERY



One of Picton's eminent lawyers, Mayor Lance Nethery, whose forebears were pioneer settlers in Prince Edward County, graduated from the University of Toronto in Arts, and studied law at Osgoode Hall.

In 1938 he was a member of the town council and the following year he became reeve. During the war he served in the armed forces, and after being discharged in 1946, Mr. Nethery again entered public life, and this year he is the mayor of Picton.

He is married and has one boy, William. Mayor Nethery is very fond of dogs and has a beautiful Aberdeen Terrier "Jason." He enjoys boating and is a member of the Prince Edward Yacht Club.

Manitoba where he received his medical degree.

He enlisted early in the war with the 5th Canadian Armored Division, served throughout hostilities, and was mentioned several times in despatches while his unit was fighting in Italy.

In July, 1947, he joined the staff of the Commission and since that time he has been associated with the Commission's medical service, working with Dr. R. W. I. Urquhart.

Dr. Grant is married and has one child, "Bonnie Louise."



IT WAS at Picton where the late F. W. Woolworth the famous chain store originator was married and it was there also where Sir John A. MacDonald, a former Prime Minister of Canada, practised law. Here is the main street which has not noticeably changed in many years. However, the interiors of the shops have been altered until they are as modern as stores in larger municipalities.

By W. R. Mathieson, Hydro News

Situated on an arm of the Bay of Quinte, which extends through the town and practically divides it into two sections, Picton is a community of comfortable homes and fine old churches, which seem to reflect many of the characteristics of the settlers who founded the community—the United Empire Loyalists.

It was the same spirit of neighbourly co-operation that developed Prince Edward County and made possible the introduction of a community-owned water-works and electrical system as far back as 1890.

The first system of domestic lighting employed the Heysler incandescent light which was coupled with a 1,000 candle-power Ball generator. This supplied stores and commercial services. In those days, the consumer paid a fixed price for each candlepower used and taking into consideration the cost of the lamps, power to-day in Picton is about five times cheaper.

It was on the hottest day of Summer that Hydro News drove up Main Street and paid a formal visit to the Picton Public Utilities Commission. Introducing ourselves to Noreen Church who told us that she had been with the Utilities for twenty-five years, and Eva Harvey, we

were shown into the manager's office, where we met William Tait. After chatting for a few minutes we got around to Hydro business. Mr. Tait produced charts and ledgers as well as the minute books of the meetings and proceeded to give us an outline of Hydro activities in his town.

Recalls Pioneer Days

We learned that the present load is over 2,000 horsepower and that the town's fifteen miles of transmission lines are fed from one substation, which is scheduled to be rebuilt. Power is supplied to 1,221 domestic, 240 commercial and 38 industrial consumers. In 1919, according to the records, power consumption in Picton amounted to 200 horsepower.

Recalling pioneer days in the Public Utilities business, Mr. Tait told us that from 1867 to 1880, coal-oil lamps were supplied for street lights as a public venture, and that a steam generator had supplied the "juice" until the advent of Hydro.

He next showed us the billing machines and expressed his gratitude to his two lady assistants for the fine job they have been doing.

At the back of the office in the meter room, Mr. Tait pointed with pride to his panels and indicated that his system of inspection was as good as any in the

Province.

We put on our hats and strolled across the street to Mayor Lance Nethery's office where the good-humoured young lawyer gave us a verbal key to the town. Back across the street we went to H. G. Blakey's hardware store where we got a glimpse of the Hydro Commissioner just as he was leaving for Belleville.

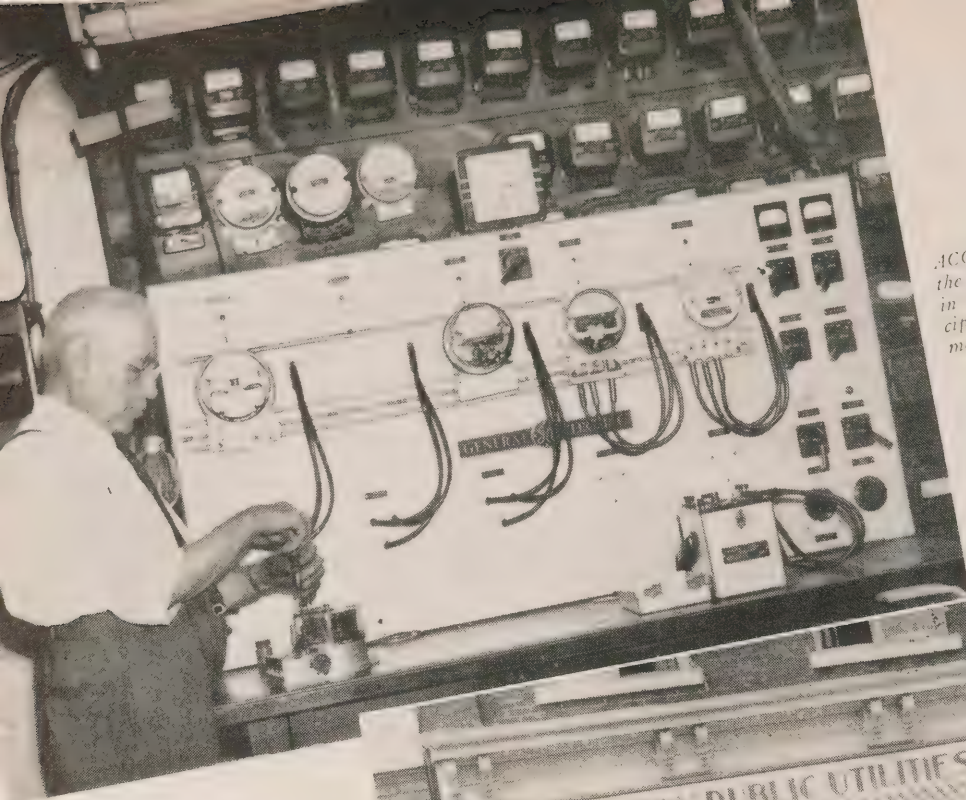
"Now," said Mr. Tait, "We're going up to Mr. Tully's store." So we retraced our steps and walked down the main street and met H. B. Tully, the chairman of the local Commission. He was just leaving for the Prince Edward Yacht Club so we drove him down and after an inspection of his power boat we sat down in the boathouse and learned some more about the community.

Named After General Picton

The town gets its name from General Sir Thomas Picton, who was one of ten Welsh national heroes in whose honour and to whose memory statues were erected in the City Hall of Cardiff, the Welsh commercial metropolis. Picton died at the Battle of Waterloo, July 18, 1815.

After the American Declaration of Independence, people living in the United States who wished to remain loyal to the Crown were given free grants of land in Canada and one of the most popular

(Continued on page 20)



ACCORDING TO William Tait, Manager of the Picton Public Utilities, the system of inspection in his town compares favourably with any municipality in the Province. Here he is shown at his meter board in the shop at the back of the office.

HERE IS the office which is located on the "main drag" in Picton. This street was at one time part of the road built by Asa Danforth, who was commissioned to build a highway through to York. This, incidentally, is the source from which Danforth Avenue in Toronto derived its name.



THIS HAPPY trio make up the staff of the Picton Public Utilities Commission. From left to right they are Noreen Church, Manager Tait, and Eva Harvey.



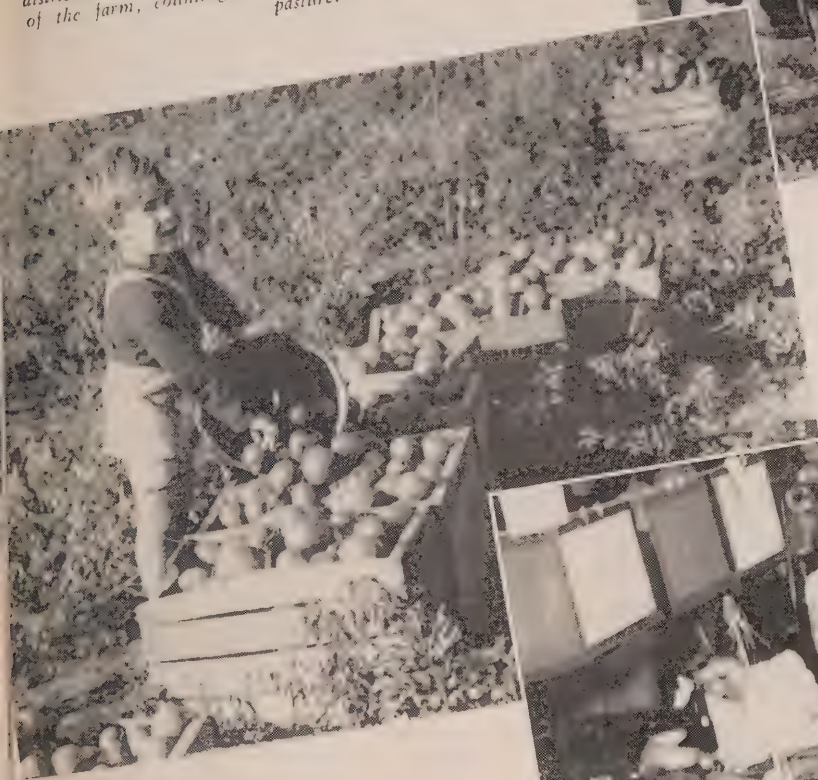
THE CHAIRMAN of the Commission, Burt Tulley, built this boat himself. It took him about two years. Its solid mahogany hull reflects the fine craftsmanship and the hours of labour that were put into the designing and construction.





REPUTED TO be the largest tree in North America east of the Rockies, this elm has always been a famous landmark in the Picton district. The National Geographic Society claim its age to be nearly 400 years.

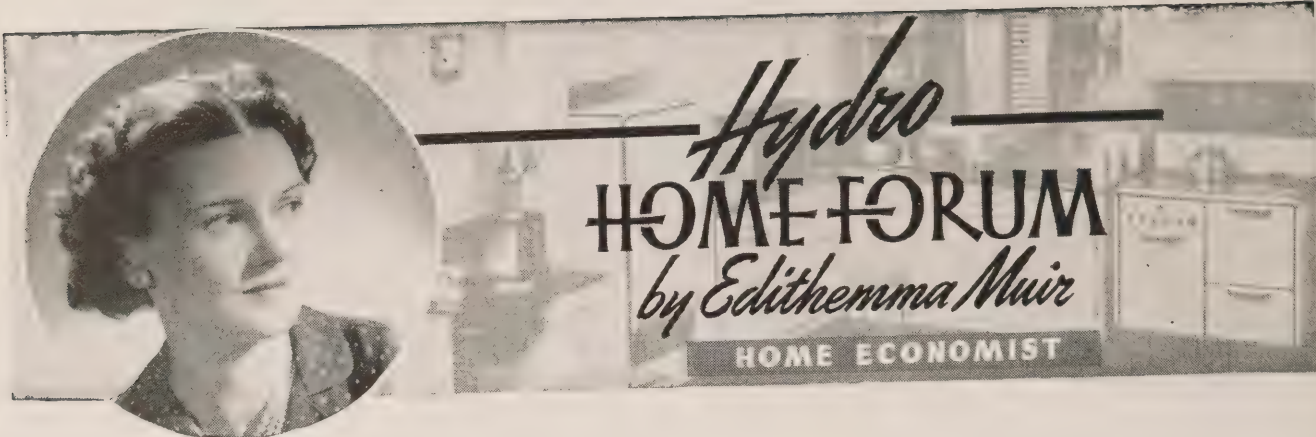
THESE CALVES are prize holstein stock for which the district has become famous. Here is Brian Dodds, the manager of the farm, counting noses before they are turned out to pasture.



THIS LITTLE fellow wasn't very happy about being in this Hydro News' picture, taken to symbolize the high quality of the local tomato crop of 1947.

WHILE PICTON is noted for its agricultural products, it has a few fine industries. This "shot" was taken at a branch of The Bata Shoe Company and shows the electrical sewing machines which form part of the assembly line which makes footwear.





Christmas is a lot of fun and a lot of work too, especially for the one who is in charge of the meals. The only sensible thing to do is to make a schedule to take care of all the extra work by easy stages. Fortunately, standard recipes for mincemeat, plum pudding and dark Christmas cake improve with keeping, so we hope you have already stored yours away.

First week in December: Make out complete memos for dinner Christmas Eve; brunch and dinner Christmas Day and Boxing Day. Make out a detailed marketing list divided into perishables and non-perishables.

Second week in December: Order your fowl from your regular butcher allowing three-quarters to one pound of turkey per person; more if you wish to have some over to serve on Boxing Day. Pick up the staple things on your shopping list and reserve a corner of your lower shelf for them.

December 20: Buy bread for turkey. Make the pastry for the mince pies and why not make your cranberry sauce, shortcake, mayonnaise and ice cream sauce too?

December 22: Now it's time to decorate the house and shop for the perishable foods. On the following day, the salad greens can be cleaned; the mince pies baked, the crumbs prepared for dressing and finally, the silver polished.

December 23: To ease the grocer's load, order the week's supply of food on Tuesday for delivery on Wednesday.

December 24: This is the day to re-check and do such things as final decorating, truss the turkey and prepare fruit cocktails. If there is room in the kitchen, it is a good idea to stock the serving dishes out there all ready for use.

Directions for roasting turkey and goose are listed here. Place slices of bacon over the breast of the dressed tur-

CHOCOLATE FUDGE

2 cups sugar
1 or 2 squares chocolate
 $\frac{1}{8}$ teaspoon cream of tartar or
2 tablespoons corn syrup
 $\frac{2}{3}$ cup milk
1 teaspoon vanilla
2 tablespoons butter.

Mix the sugar, milk, grated chocolate, cream of tartar or corn syrup and boil rather slowly, stirring until ingredients are well blended. Boil to the soft-ball stage (238°F.). Remove from the electric element, add the butter, but do not stir it in. When lukewarm, add the vanilla and beat until it creams; that is, until the shiny appearance disappears and the fudge will hold its shape when dropped from the spoon. Spread it in a buttered pan and when it hardens mark it into squares.

key, cover with wet, heavy brown paper and bake in a pre-heated oven of 350 degrees, allowing 25 minutes per pound for fowl up to eleven pounds (no top heat is used). Cook larger birds over fifteen pounds for over four and a half hours.

Creamed Turkey: Reheat diced turkey and diced celery in a medium cream sauce or mushroom soup, and serve between hot biscuits.

Coffee and Tea: Should I use water from hot water tap or cold water tap when making coffee or tea? Freshly boiled cold water will have a more full-bodied and fresher flavour.

Honey: Because honey is concentrated, it can be made to go further thinning it with water. Honey is very good with hot toast, but a point you need to keep in mind is that thinned honey ferments in a few days and it is therefore advisable to thin only a small quantity at a time.

Jellied fruit will go further if you break it up and fold in whipped cream. Chill in the freezing tray for a delicious dessert called Mousse.

Chicken Salad: For a flavourful chicken salad, marinate three cups of chopped chicken for several hours in a dressing of one-half cup chicken broth, plus an equal amount of vinegar; season with onions, Tobasco sauce and salt. Remove chicken from marinade and combine with chopped apple, capers and salad dressing. Garnish with quarters of hard cocked egg.

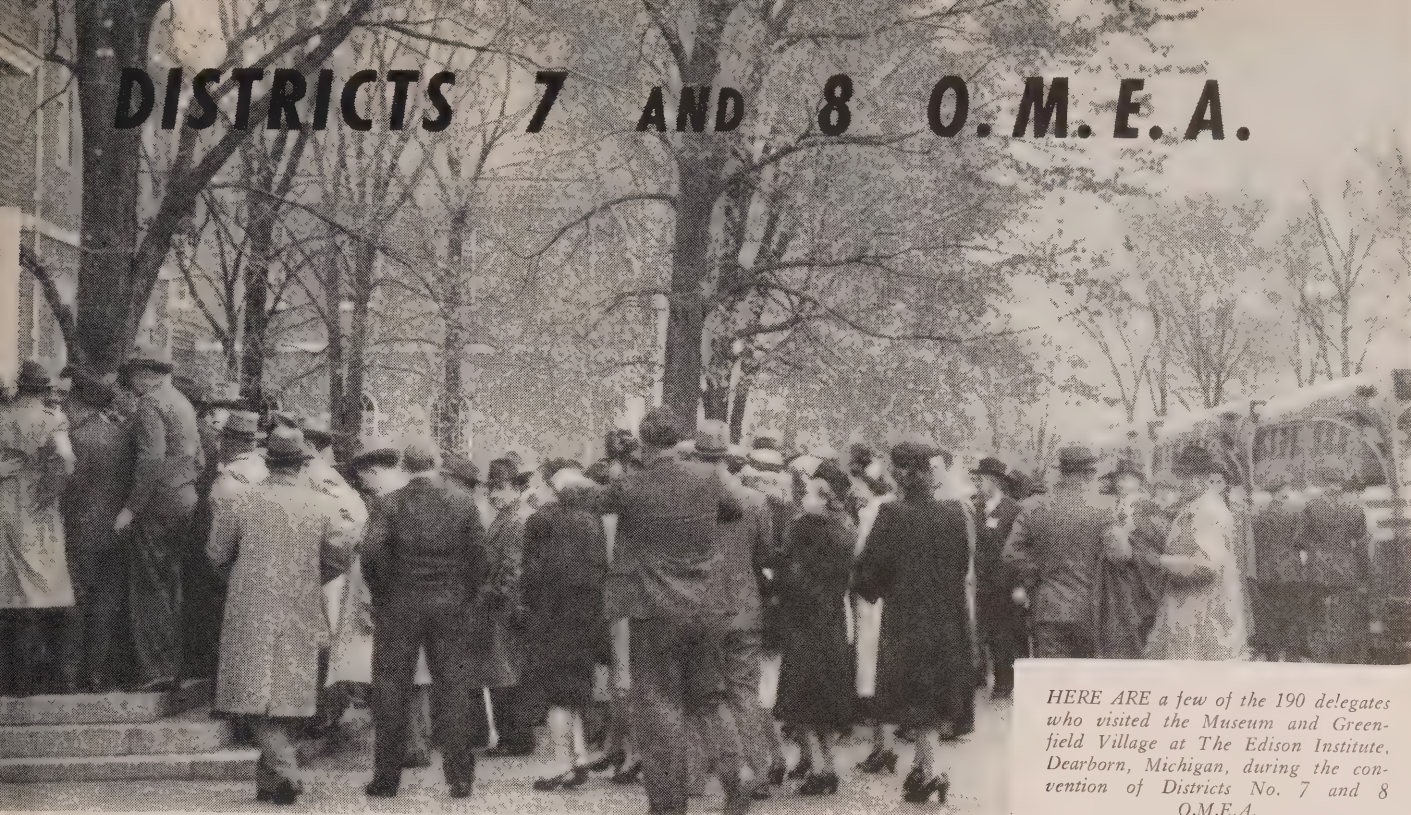
French Fried Sandwiches: Arrange thin slices of cheese and cranberry sauce between slices of buttered bread. Combine two slightly beaten eggs, one cup of milk, salt and pepper. Brush the sandwiches with the mixture and brown on both sides in the frying pan with a little shortening in it. Serve hot.

Hard Cooked Egg whites, cut with a tiny star-shaped cutter, may be placed on bowls of soup to give this food a festive air.

Candy: Of all the different foods available to us, candy arouses the most enthusiasm. People of all ages crave candy. And now that sugar is no longer rationed, we will want to try our hand at homemade confections. Two precautions to remember while making fudge is the accurate measurement of corn syrup and cream of tartar and the gentle, even boiling of the candy mixture until the thermometer registers 240 degrees. It also takes a strong arm to beat fudge, since the mixture should not be beaten until it is cool.

Boxing Day has no reference to things pugilistic. In England the day after Christmas is so called because years ago the Christmas boxes placed in the churches for casual contributions were opened and the contents distributed to those who had rendered services without pay.

DISTRICTS 7 AND 8 O.M.E.A.



HERE ARE a few of the 190 delegates who visited the Museum and Greenfield Village at The Edison Institute, Dearborn, Michigan, during the convention of Districts No. 7 and 8 O.M.E.A.

SEES HYDRO ON THRESHOLD OF NEW ERA OF PROGRESS

By Grace J. Carter,
Hydro News

Hydro, whose primary objective is to provide the best service possible, stands on the threshold of a new era of progress, W. Ross Strike, K.C., Second Vice-Chairman of The Hydro-Electric Power Commission of Ontario, told a gathering of delegates in attendance at a convention of Districts 7 and 8 O.M.E.A. recently.

His address was given at a banquet in the Dearborn Inn, an event which climaxed a visit to the famous Greenfield Village in Dearborn, Michigan.

He spoke of the tremendous \$250,000,000 post-war construction programme which was now underway to develop nearly 1,000,000 horsepower within the next few years and pointed out that the St. Lawrence "might come faster than we think."

At another point, Mr. Strike said that quite often he was asked the question: "Who owns Hydro?"

"Some people," Mr. Strike said, "think the municipalities own it, some people say the Government owns it, and there are others who say they don't know who

owns it."

Fundamentally, he stated, the people of Ontario who owned the water resources owned Hydro. The consumers, the municipalities, the Commission and the Government all had separate and peculiar functions to perform to keep that ownership inviolate, he pointed out.

"I think," the Second Vice-Chairman said, "whether by design or by good luck, Hydro has an organization in this province that is second to none. In the present organization we can get the best possible administration close to the consumer through our municipalities; then for the municipalities we have the Provincial Commission which takes care of the generation of the power itself, and then over all that again the Government has its function to perform."

But, Mr. Strike pointed out, Hydro in Ontario could not function properly unless the three bodies worked smoothly and co-operated one with the other.

In his address at the noon luncheon at the Prince Edward Hotel in Windsor, R. L. Hearn, General Manager and Chief Engineer of The Hydro-Electric Power Commission, pointed out that Ontario today was experiencing the greatest period of industrial development in her

history and that Hydro was pacing that development. Low-cost Hydro power was also giving an ever-accelerating impetus to agricultural production.

Last year, Mr. Hearn said, the Commission supplied to all classes of consumers over 12 billion kilowatt-hours.

The General Manager said that the Commission was proceeding at an "all out" pace with the construction of new plants to meet the pyramiding power demands. He pointed out that the Commission realized how important power was to industry, agriculture and to the domestic consumer. He felt that it was important that an adequate supply of power be kept flowing to industry and agriculture in order to maintain maximum employment and the production of much-needed consumer goods for overseas as well as the domestic market.

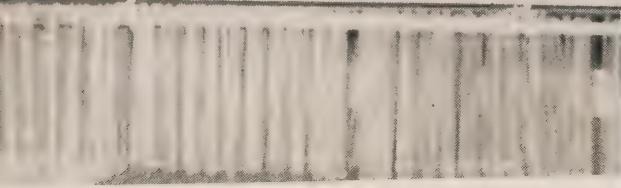
Mr. Hearn went on to say that in order to take care of the enormous expansion programme now underway that the Commission had increased its staff from 5,000 in 1945 to 12,000 at the present time. This figure, he pointed out, included an increase from 1,000 to 5,000 in the construction staff during the same period.

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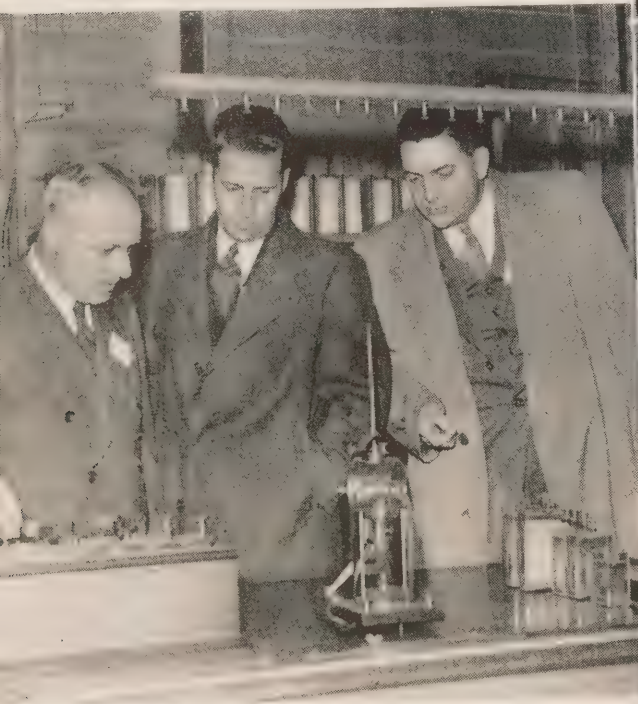
VISIT TO DEARBORN

MANY INTERESTING exhibits were seen by delegates of Districts 7 and 8, O.M.E.A. when they visited The Museum and Greenfield Village, Dearborn, Michigan. In this illustration taken in the village spinning mill we have on the left, A. McTavish; E. C. Morand and Mrs. Morand of Tecumseh.



A FORD racer of 1910 vintage holds the interest of Gordon H. Fuller, Chairman of District No. 8 O.M.E.A., Windsor; Mrs. Kathleen Kestell, Secretary-Treasurer of O.M.E.A. Guelph; and Mrs. Fuller.

R. M. DURNFORD, President of the O.M.E.A. Sarnia (below); C. W. King, Dresden and J. J. Cleaver, Windsor found the Edison Laboratory at Greenfield Village particularly interesting. When this "shot" was taken they were looking at some cells and a Wheatstone Bridge.



IN THE upper right illustration we have A. W. Manby, Assistant General Manager—Administration; M. J. McHenry, Director of Consumer Services; H. H. Pegg and J. J. Cleaver of Windsor looking at a Rolls Royce chassis in The Museum of The Edison Institute.

F. J. McLEOD and A. D. Campbell of Ailsa Craig Hydro-Electric Commission are intrigued with this Ford model engine in The Museum at The Edison Institute.



THIS GROUP of delegates were just getting "warmed up" before the luncheon session of Districts 7 and 8, O.M.E.A. Those identified are V. A. Beacock, Rural Service Engineer, H.E.P.C., on the left, and Ed. Wallace, Windsor, on the extreme right.

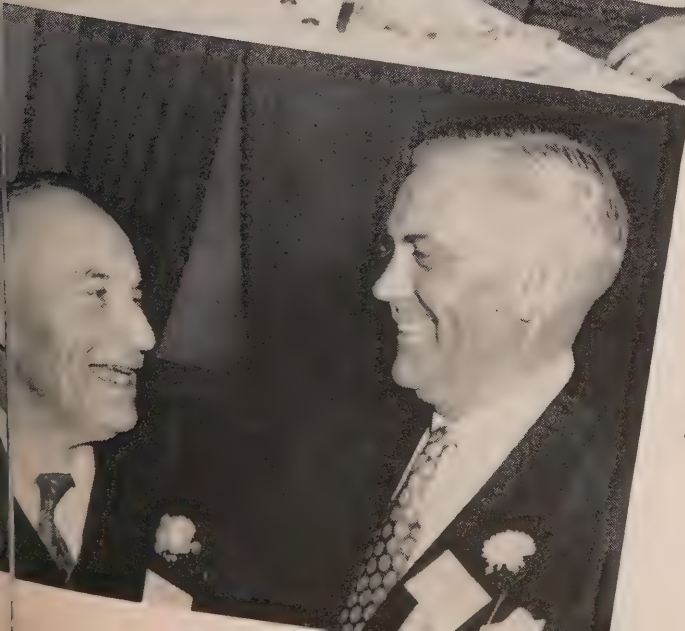


THINK OF a song, think of a number—these fellows around the piano are all ready to sing. From left to right they are A. D. McKillop, West Lorne; J. A. Bowman, E. A. Washburn, Mayor C. W. Riley, all of Ingersoll Public Utilities Commission; and Adam Smith, H.E.P.C.

MUST HAVE been a good one, (below) or maybe these delegates are just feeling better after a good dinner. On the left is J. D. Leach, Windsor Utilities Commission; Mrs. Kathleen Kestell, Secretary-Treasurer of the O.M.E.A., Guelph; and A. J. Brien, Windsor Utilities Commission.



WITH BUSINESS forgotten (upper left) for the luncheon period, the representatives of the Thamesford Public Utilities Commission, really enjoyed the "ribbing" they took when they donned their "best bibs and tuckers" to face the Hydro News' camera. From left to right they are Perce Elgie, W. J. MacKay, A. C. Carter and J. H. Clark.



THE END of a perfect day! J. Clark Keith (left) and Gordon H. Fuller of Windsor Utilities Commission, in charge of affairs, congratulate each other at the end of the convention that everything went off as per schedule.

DISTRICTS 7 AND 8

(Continued from page 17)

In his address, A. W. Manby, Assistant General Manager—Administration, pointed out that in December, 1945 Hydro's power resources just about equalled the demand. "Actually," he said, "there was a slight deficiency of approximately 50,000 kilowatts as we entered the post-war period. We had scraped the barrel as far as power was concerned."

Since the war, Mr. Manby stated, the demand had increased rather than decreased, and from the end of 1945 until this year the demand had pyramided by approximately 400,000 kilowatts. The Commission, the speaker said, had made every endeavour to secure additional power through purchase. They had been able to obtain a very limited additional amount but were securing at the present time every last kilowatt that could be obtained from Quebec.

In conclusion Mr. Manby said, "I would like to leave these thoughts with you, that there is a serious deficiency and that there are going to be drastic cuts in some of the industries. It is up to every one of us to save power in every way we can and to see that power is not wasted so that the industrial economy of this province will be kept at a high level."

During the noon luncheon Arthur J. Reaume, Mayor of Windsor, welcomed the guests numbering over 180, and extended to them the "freedom of the city." Following the luncheon the delegates boarded buses and, escorted by motorcycle policemen, proceeded to Greenfield Village in the City of Dearborn, Michigan. Following a tour of this extensive development the guests had dinner at the Dearborn Inn.

Tait decided we should see one of the finest farms in Prince Edward County. A farm where it was not unusual for a cow to be worth \$6,000. When we arrived there it was just milking time and Brian Dodds, who is the manager, had just finished grinding the feed and was about to hook up the electric milkers. And by the way, Mr. Dodds passed along a very interesting tip to farmers who are interested in conserving power. It was this: "I never do a grinding operation and have the milking machines going at the same time, because Mr. Tait tells me we should avoid any more strain on our electric service than necessary."

In one pasture near the barn, Hydro News was shown a herd of cows which were about to be shipped to Europe to help replace depleted stocks there.

Back in town again we paid a short visit to the library to get some information on the school situation. Early records are very sketchy but it was apparent that most schools in the 1800's were private schools which charged tuition fees. A good staff of teachers now instruct the children of Picton in their well-equipped public and high schools.

Local Newspapers

The history of any town is perhaps best recorded in its local newspapers, and the Picton Gazette traces its origin back to 1830 when it was known as the Hallowell Free Press. This was before the town was incorporated and was still a community called Hallowell. Today this up-to-date newspaper has its own mat and engraving service and has the distinction of being one of the six oldest newspapers in Canada. The Picton Times was founded in 1854 by Robert Boyle and since 1883 has been in the hands of the McLean family who also have recently brought in their own engraving plant.

Possibly the town's most notable resident was the late Sir John A. MacDonald who, for a time practised law and it was said that he won his first case there.

Today Picton is perhaps best known for its international yacht club racing and speedboating. Notables in this thrilling sport come from all over America to compete annually in this thrilling spectacle.

In conversations with Picton people, Hydro News was impressed with the pride the town has taken in the public ownership of its utilities. It was Mr. Tait who summed things up for us by saying "Unless you have been to Picton you might think from its location and size that it is a one-horse town, but I have yet to see any young men or women who were born and raised in our town either ashamed or unwilling to admit they came from Picton."



LOOKS LIKE R. L. Hearn, General Manager and Chief Engineer, H.E.P.C. is a willing "pin-up" for this smiling young lady, while A. W. Manby, (left) Assistant General Manager—Administration, waits his turn, and W. Ross Strike, K.C., Second Vice-Chairman, adjusts his own O.M.E.A. badge.

PICTON

(Continued from page 13)

places for these settlers was Prince Edward County.

Towards the last part of the 19th Century, waterworks replaced the town cisterns and by 1900 the people realized that the Heysler system of lighting was inadequate to meet the needs of the town and a new and more modern system was proposed and \$15,000 was raised for the project. From that time all matters pertaining to electric light and water works were administered by this board.

With the passing of time, important and permanent improvements were made and cost of electricity was cut to 6 cents

a kilowatt-hour which is believed to be as low as any rate in Ontario where electric service was provided by steam generation.

Mr. Tait told Hydro News that \$32,000 had been returned to the consumers and \$7,000 to the town and, in addition, Picton Public Utilities had a good surplus at present in both War Bonds and cash.

Industry and Farming

Mr. Tully invited Mr. Tait and Hydro News to join him in a soft drink at the clubhouse and it was there that we mentioned that we would like to see some industries in the town. We were informed that the big business in Picton is canning, but just recently the Bata Shoe Company had opened up a plant at which we would be very welcome. After a quick tour through Bata, Mr.

FOOTSORE BUT HAPPY AFTER DEARBORN TRIP

Districts 7 And 8 Delegates Turn Back Pages Of History

For a few crowded hours on October 30, delegates of Districts 7 and 8, Ontario Municipal Electric Association, turned back the pages of history hundreds of years when they included a visit to The Edison Institute at Dearborn, Michigan on their convention programme.

Paced by a motorcycle escort, a party of approximately 200 proceeded by bus to Dearborn, where they were taken on specially conducted tours through the Museum and Greenfield Village at The Edison Institute.

This now famous centre where the march of history finds expression in a widely diversified collection of art, science, agriculture and other exhibits covers an area of some 200 acres immediately outside Detroit.

While it could conceivably take weeks to fully explore the wealth of historic treasure to be found at the Institute, the visiting delegates made the most of their limited schedule and "took in" as much as possible. They saw early electrical equipment, automobiles dating back to before the gay 90's, stores, shops, mills and other structures and inventions of yesteryear.

They found practically all fields of human achievement and progress represented at this great mecca of history where the visitor is fascinated and thrilled by exhibits which are truly "out of this world."

The O.M.E.A. delegates came, saw and concurred that their trip proved both interesting and informative—even though they were a little footsore when they proceeded to Dearborn Inn and gladly sat down to dinner.



"SNAPPED" WHILE chatting before lunch, these delegates from left to right are Henry Rehder, Paris; Mrs. R. M. Durnford, Sarnia, wife of the president of the O.M.E.A.; Mr. and Mrs. G. N. Galloway, Sarnia.

R. P. TURNER PASSES

ROBERT POUSTIE TURNER, formerly Commissioner of Merritton Hydro-Electric Commission, passed away recently in the St. Catharines General Hospital after a short illness.

Born in 1887 near Edinburgh, Scotland, Mr. Turner settled in Merritton in 1907.

Bobby, as he was known to his many friends, had been associated with the

Interlake Tissue Mills as chief electrician since 1921.

Mr. Turner was elected as Commissioner in 1924 to the local public utilities commission, as it was called at that time and, with the exception of one year, had served continuously until his death.

He was a member of the Merritton Welfare Board, the Lions' Club and the Independent Order of Odd Fellows.

Surviving are his widow, the former Minnie Niles, one son and four daughters.

CUT COST OF POWER TO SIOUX LOOKOUT

Reduction From \$70 to \$39 Announced—Dryden May Join Hydro Family

Reduction from \$70.00 to \$39.00 per horsepower per annum in the cost of power to Sioux Lookout and an offer to supply the municipality of Dryden with power at \$37.50 are announced by The Hydro-Electric Power Commission of Ontario. The cost of power to these two towns is on the basis of virtual equality, due to the difference in the voltage of supply.

The new rate for Sioux Lookout will be effective from January 1, 1948, and over 500 consumers located there will benefit on the first billing by a reduction of approximately 20 per cent in the cost of electricity. If the agreement suggested for Dryden is accepted, it will be the first time that this municipality has received power directly from Hydro. Consumers would enjoy a reduction of approximately 10 per cent over prevailing rates, it is stated.

The new arrangements have been approved by the Provincial Government, on whose behalf the Commission operates the Northern Ontario Properties, and are in line with a policy to furnish power to municipalities of Northern Ontario, as they develop, on terms which compare favourably with Southern Ontario municipalities.

THIS AND THAT

(Continued from page 9)

rededication of one's heart and mind to the accomplishment of all tasks and services which the future may hold in store in the journey through life.

The Future! The Ghost of Christmas Yet to Come! And as we meditate about these things which destiny may unfold, we wonder if the efforts of men of goodwill will prevail . . . if the world will emerge from its uncertainty and chaos . . . if the time will come when there will be no more war, no more hunger . . . if there will be Christmases in the future when there will be rocking horses, sail boats, red engines and full stockings for all children . . . everywhere in the world.

Somehow, it seems to us that that is the kind of a Christmas which could make all the world kin.

With these few Christmas thoughts, we would like to extend our sincere wishes to our readers for a very Happy Christmas and Happier Christmases yet to come.

Hydro Power Is Driving Force In March To Greater Destiny

Modified Form Of Power Rationing Announced By Hydro In Conjunction With Vigorous Educational Campaign To Promote Conservation — Demand For Power Soaring During Ontario's Greatest Period of Industrial And Economic Growth

Just how many jobs is electricity being called upon to do in Ontario at the present time?

What would life be like in this province if there were no electricity?

These thought-provoking questions have been prompted by the present phenomenal industrial growth now taking place in Ontario—a growth which is being paced by electricity.

The factory worker, the engineer, the farmer, the miner, the housewife, the storekeeper, the teacher, the student, the garage mechanic and thousands of skilled, semi-skilled and professional workers at almost every hour of the day and night are flipping on hundreds of thousands of switches to obtain this vital driving force which performs almost countless tasks.

It has been stated that if this panorama of ceaseless activity in relation to the present power supply situation could be viewed by all classes of Hydro consumers in Ontario the reasons why there is a

need for vigilant co-operation in helping to save power at this time would become self-evident.

The educational campaign launched by The Hydro-Electric Power Commission of Ontario emphasizes that voluntary conservation of power in factory, home, office and on the farm is imperative because the modified form of power rationing inaugurated on November 10 is not alone enough to effect the required saving.

Effective voluntary co-operation in saving power along with modified rationing pending the completion of new power plants now under construction, it is pointed out, will make it possible to maintain Ontario's accelerating production and maximum employment.

Under the rationing system, the use of electricity for signs, show windows, and ornamental lighting for decorative or advertising purposes is prohibited. The operation of air heaters, electric grates, or electric boilers used for heating stores or offices is also prohibited. In addition, a

ban has been placed on lighting of interiors of business premises after business hours, unless work is being done. An exception will be made for banks and other business places requiring light for protection.

Flood-lighting of parking lots, used-car lots, service stations, outdoor industrial premises and the lighting of marquees, entrances and exits is restricted to the minimum amount deemed necessary in the interests of public safety.

Many Factors Responsible

Many factors have contributed to the present power supply situation which is not peculiar to Ontario alone. Indeed, it is pointed out, in many countries, and particularly in Britain and a number of European countries, the situation is far more serious. So far as Ontario is concerned, it was impossible for the Commission to proceed with regular power con-

(Continued on next page)

HYDRO'S EDUCATIONAL campaign to direct attention to the present power supply situation also involves the use of big posters, as shown below. As a result of these messages Hydro's slogan, "Save Electricity," is now widely known.



EVEN THE street cars, as shown above, carry messages of conservation throughout the city. In this way hundreds of thousands of passengers are constantly reminded of the importance of playing their parts in helping save electricity.





DRIVING FORCE

(Continued from page 22)

struction programmes during the war years when all materials and labour were enlisted in Canada's all-out war effort. During these years the entire resources of the Commission were utilized to provide the power necessary to maintain the steady flow of munitions and war equipment. As a result, it was possible to carry out only a limited programme of new construction and rehabilitation.

It was generally anticipated, not only in Ontario, but in other parts of Canada and the United States and elsewhere, that the end of the war would have brought a sharp recession in load demand as war industries effected the transition to peacetime production. This recession did not materialize. Instead, as pointed out, the increase in load demand since the cessation of hostilities has been between 25 and 30 percent.

Hydro, therefore, has been faced not only with the tremendous backlog of work accumulated during the war years, but with steadily pyramiding demands for more power. These demands reflect the phenomenal industrial growth which is now taking place throughout Ontario.

Individual Conservation Vital

While the use of electricity for interior domestic purposes is not prohibited under the rationing system, there is a vital need for voluntary saving on the part of all classes of individual consumers both day and night.

Every consumer should remember one

particular fact about electric power: Once it is generated it cannot be stored or kept in reserve. It is transmitted to its destination for immediate use. But, water, which is required to generate electricity, can be stored in the reservoirs behind the power dams.

Thus, if consumers remember to use power carefully and wisely more water can be conserved. Then, when Hydro plants are called upon to supply more power during peak hours there will be sufficient water in reserve to meet the demand each day.

Since modified rationing was instituted a saving of approximately 66,000 horsepower has been effected. However, there must be an equivalent or better saving among individual consumers to ensure an adequate conservation of power.

Already, many Ontario industries are giving invaluable and wholehearted co-operation in conserving power by switching off lights, motors and other electrical equipment when they are not in use. Consistent co-operation of this character on the part of all industries, it is emphasized, can help keep the people of Ontario marching along Prosperity Street.



EVERYONE IS saving electricity these days. Here's a family who are co-operating to the best of their ability and doing a fine job of it. TOP LEFT: before they had ever heard about the conservation programme. Dad, and mother, junior and the baby are burning all the lights they could find to switch on. BOTTOM RIGHT: they discovered they could get along just as well by using one good light and grouping themselves around it.

DR. F. A. GABY



(Photograph by Karsh)

IN THE recent death of Dr. Frederick A. Gaby Ontario lost a distinguished citizen who was prominently associated with Hydro during a critical period of its growth and development. Dr. Gaby was born at Richmond Hill in 1878. Graduating B.A.Sc. from the University of Toronto in 1904, he began his engineering career with the Canadian General Electric. This was followed by employment with the Toronto-Niagara Power Company and an appointment as Assist-

ant Electrical Engineer at Pont du Bois, Winnipeg.

Appointed Chief Engineer

In 1907, the late Sir Adam Beck secured his services for Hydro, and in 1912 he was promoted to the position of Assistant Chief Engineer of the Commission. This post he held during the construction of the Queenston-Chippawa Development. In 1912 he was appointed Chief Engineer of the Commission. He

K. G. STARR DIES

KIRBY GORDON STARR, Secretary-Treasurer of the Public Utilities Commission, passed away recently at the Brockville General Hospital. He was in his 78th year.

Born in Prescott on March 6, 1869, Mr. Starr was the son of the late Gordon Alexander Starr and his mother was the former Eliza Elwood, both natives of Brockville.

The deceased was educated in Brockville and in 1902 joined the staff of Postal Telegraph in Chicago. Later he lived for a time in Schenectady.

For another period in his life, the late Mr. Starr was connected with a firm of chartered accountants in Toronto and following this he returned to his home town to become Secretary-Treasurer of the Hall Glove Works.

It was in 1917 when he was appointed to the post of Secretary-Treasurer of the Brockville Public Utilities Commission, a position he held until his death.

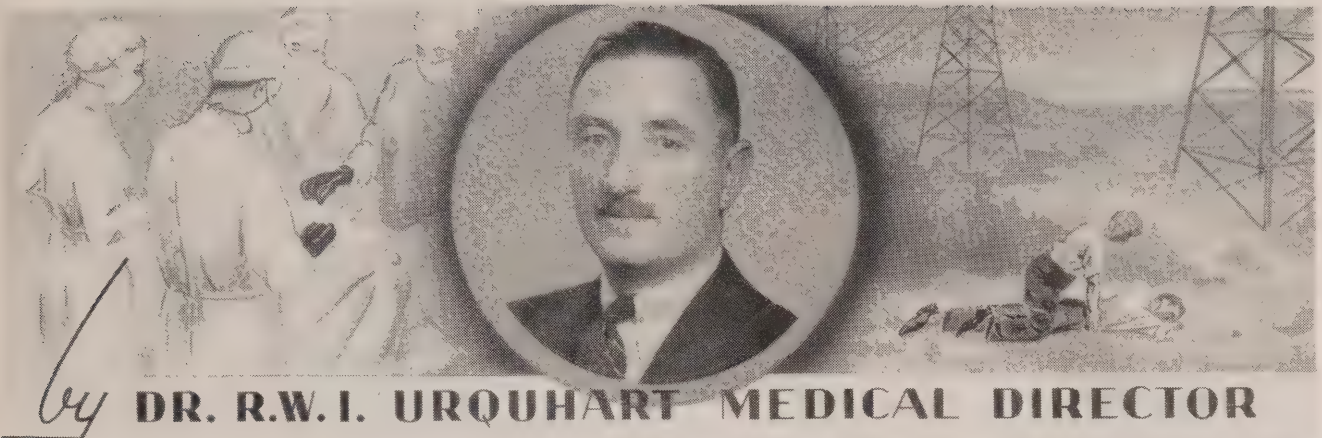
Prominent in literary circles, Mr. Starr wrote under the pen name of John McGurk and contributed his writings to a number of magazines. He also had written several songs, one of which was used in a Rotary show recently. The deceased was a past member of the board of governors of the Brockville General Hospital. He was also keenly interested in sports.

He is survived by his widow, the former Henrietta A. Riddell, one son and one daughter.

later received the honorary degree of Doctor of Science from his Alma Mater in recognition of his distinguished services in the hydro-electric field. His retirement was announced in 1934, and shortly afterward he became Executive Assistant to the President of the Canadian Pacific Railway.

Wide Range of Interests

From 1936 to 1945 he held the position of Executive Vice-President with the British American Oil Company and continued up to the time of his death as a director of that organization. An outstanding engineer, Dr. Gaby was a man with a wide range of interests and these were reflected by his membership in many professional associations both in Canada and abroad. He is survived by his widow, who, prior to her marriage, was Catherine Florence MacBeth; by two sons, Fred M. Gaby and Robert M. Gaby, both of Toronto, and by two daughters, Mrs. R. F. Porter of Toronto and Mrs. W. R. MacBrien of Ottawa. A brother, Dr. Robert E. Gaby, Consulting Surgeon and Medical Adviser to Hydro, died two years ago.



DR. R.W.I. URQUHART MEDICAL DIRECTOR

FIRST AID

A good definition of First Aid is that it is the immediate care given in case of accident or sudden illness. Its purpose is to relieve the distress of the patient and to minimize the chances of the development of further damage as the result of the injury. It may even be the means of saving life.

In an organization such as ours there is a definite need for the widespread knowledge of elementary First Aid. Many minor injuries treated in the field are never reported to the Medical Department, but the number of both major and minor injuries that are reported gives a definite indication of this need. There is not an employee of the Commission but could benefit from this type of knowledge.

To do elementary first aid it is not necessary that one have the specialized and extensive knowledge of a doctor or nurse, or even of a trained First Aid man. It is only necessary to remember certain broad general principles and to apply them with common sense. The few simple techniques which are necessary can be learned readily and are, in fact, the obvious procedures when one understands the underlying principles. These principles will be brought out in the discussion of the various types of accident.

The first group of injuries to be discussed are those which, while of varying severity, do not immediately endanger life. They require attention in order to relieve suffering and to prevent further damage from occurring. Into this class fall the majority of accidents. It includes wounds and injuries of all kinds, with or without gross bleeding, fractures, sprains and dislocations, burns, scalds and so on. These

conditions require local treatment at the time and frequently, later the skilled services of the doctor.

Most Common Type

The most common type of injury, and the one I wish to deal with particularly in this article, is known as a wound. A wound is defined as a break in the skin or mucous membranes of the body, and may vary in size from the smallest pin-prick or scrape to the largest deep contused laceration.

There are three dangers inherent in every wound, the first of which is infection. Infection can occur as readily in the smallest wound as in the largest. Under ordinary conditions, the skin and mucous membranes of the body provide almost perfect protection for the tissues which lie beneath them. It is only when a break occurs that the germs or bacteria usually present on the surface have the opportunity to actually get into these tissues. Once they do get in they multiply rapidly and what is known as infection has occurred. Fortunately an intact skin is not the only defence of the body to infection. The presence of bacteria in the body mobilizes other defences such as the white blood cells, etc., and unless the bacteria are particularly virulent, or the defence mechanisms unusually weak, the infection eventually will be conquered. Under these circumstances, it will be at the cost of much discomfort, lost time and even actual danger to the unfortunate victim.

The first great principle in the treatment of wounds, therefore, is to prevent infection. This means that care should be taken that no further opportunity be given for bacteria to get into the wound. In other words, cover the wound and keep it covered. Where one is

dealing with small wounds such as the small cuts and scratches which are so common, it does no harm to wash them thoroughly with soap and water — provided of course the water that is used is of the type that is fit for drinking or has been boiled. They should then be covered with a small sterile dressing which can be held in place with a bandage or with adhesive. Where it is not possible to treat them in this way because of the lack of suitable water, it is still good practice to daub mild tincture of iodine around the edges of the wound before applying the dressing. The use of iodine in wounds, particularly in large wounds, has recently come under question, and is not advocated as generally as formerly. If at all possible, leave the cleansing of large wounds, which in any case will probably require what is known as debridement—the cutting away of tissue which is not likely to live—and suturing, to the skilled hands of the physician. Cover these wounds with a large sterile pad and secure with a bandage.

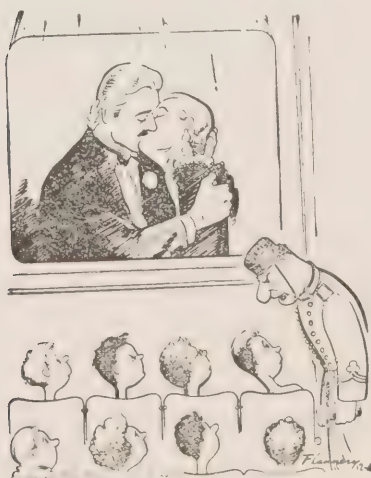
Proper Method

It might be well at this point to say a few words about the proper method of handling sterile material. All of the materials for dressings supplied in the first aid kits are packaged so that they will remain sterile if properly handled. Open the package and the dressing with care so that your fingers do not touch the part of the dressing that will be placed on the wound. This can be done by grasping the dressing by the corners with the tips of the fingers only while placing it on the wound. Once it is in place do not move it around but secure it with adhesive or a bandage. Dressings usually do not need to be changed oftener than once a day.

(To be continued next month)

Lighter Lines

When you're frantically getting your last Christmas cards stamped and addressed, do you ever stop and wonder how this custom ever got started? Here's the story. We can thank (or blame) one Sir Henry Cole, an Englishman, who, when the Christmas of 1846 approached, found he hadn't time to write his usual Christmas letters. However, he had a bright idea. He went to an artist friend, ordered a picture to be painted, then he had it lithographed in black and white and coloured by hand on cards suitable for sending by post. The artist, J. C. Horsley R.A. chose to paint a cheerful English family seated at their Christmas dinner table. In the next few years the idea of the personal Christmas greeting card was adopted by a few other people including the Royal family, but it did not become generally popular until about 1880. Since then, on both sides of the Atlantic, for many weeks before Christmas, shops vie with each other in tremendous and colourful displays of cards with motifs and messages to suit every possible taste and purse.



"Who's the wise guy popping bubble gum?"



*Christmas is here,
Merry old Christmas,
Gift-bearing, heart-touching, joy-bringing
Christmas,
Day of grand memories, king of the year!*
—Washington Irving

Among things to be thankful for at this season is that we are not spending Christmas in early New England. The Puritans were bitterly opposed to it and in Massachusetts in 1659 a law was passed which read, "Whosoever shall be found observing any such day as Christmas or the like, either by forbearing of labour or feasting or any other way, shall be fined 5 shillings." This law held for 22 years and Christmas did not become a legal holiday until late in the first half of the nineteenth century.

The exchange of Christmas gifts ought to be reciprocal rather than retaliatory.

The following conversation took place just prior to the Yuletide season:

"Mandy, are you goin' to hang up any mistletoe when Christmas comes?"

"No, indeed I ain't. I got too much pride to advertise for the ordinary courtesies that a lady has a right to expect!"

Strange Christmas Superstitions

It used to be said that if you ate a raw egg first thing on Christmas morning you would be able to lift heavy weights.

In Germany the crumbs from the Christmas table when shaken on the soil caused a little plant known as the Crumbwort to spring up and this plant was said to have great healing powers.

In England it was believed that bread baked on Christmas day would not go mouldy.

In Scandinavia families used to put all their shoes together on Christmas believing it would result in their living in harmony all the rest of the year.

There is a Scottish belief that to be born on Christmas is to have power to see spirits and even to command them.

In Silesia it is said that a baby born on Christmas will become either a lawyer or a thief.

One of the most picturesque beliefs found in many countries was that in honour of the Christ Child the bees hummed a carol on Christmas day. In England it was the custom to place a sprig of holly on the hive to wish the bees a merry Christmas.



"Why, Homer and Myrtle, what a delightful surprise! — Come in!
"We're just having a little impromptu gathering."

HYDRO AT WORK

LIGHT IN THE ROLE OF POLICEMAN



Electricity, in the guise of light, as well as of heat, can be put to work to protect the premature infant. The electrically-heated incubator takes care of the temperature and humidity problem. But the baby must be brought out of the incubator regularly for feedings and care and in its undeveloped condition it is very vulnerable to dangerous germs that may be lurking about.

The photograph above shows one way that the Hospital for Sick Children in Toronto guard their premature infants from infection. Anyone entering their room must pass through a double doorway of glass, each door frame having a rim of ultra-violet light around it. Each cubicle, as well, has a complete border of ultra-violet light as a germicidal protection.

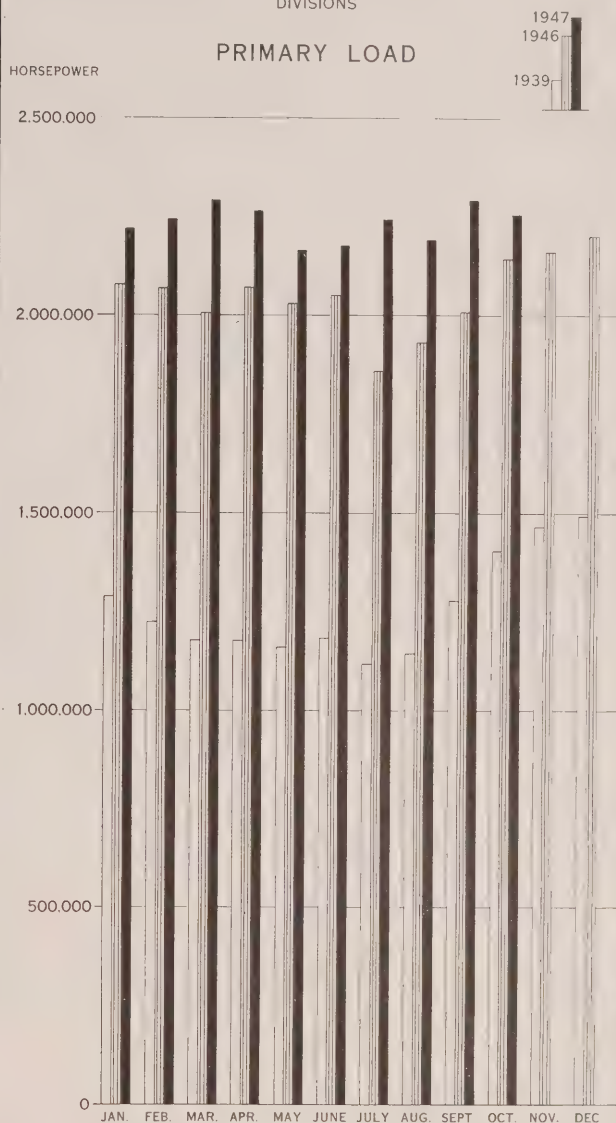
These thin lines of blue-white light are first cousins to the sun itself. Ultra-violet rays are shorter than violet rays, lie beyond the spectrum and are invisible unless they are thrown against some sort of fluorescent screen. The only natural source for them is sunlight; the artificial sources are either mercury vapour lamps or arc lamps. The rays have, among other attributes, great power to kill microbes. Their penetrating power is small but they are capable of sterilizing surfaces.

The Hospital for Sick Children installed these ultra-violet lights eleven years ago as an experiment. Since then they have found, as have many hospitals all over this continent, that these "curtains" of sterile light have a very appreciable effect in cutting down infection caused by air-borne bacteria.

SOUTHERN ONTARIO SYSTEM

EMBRACING NIAGARA, GEORGIAN BAY AND EASTERN ONTARIO DIVISIONS

PRIMARY LOAD



POWER DEMANDS AND TOTAL OUTPUT

AREA SERVED BY	MAXIMUM 20-MINUTE PEAK KW		PER CENT INCREASE
	OCTOBER, 1947	OCTOBER, 1946	
PRIMARY DEMANDS — ACTUAL LOADS PLUS CUTS			
SOUTHERN ONTARIO SYSTEM	1,868,809	1,687,438	+ 10.7
THUNDER BAY SYSTEM	112,585	105,500	+ 6.7
NORTHERN ONTARIO PROPERTIES	<u>188,340</u>	<u>169,109</u>	+ <u>11.4</u>
TOTAL	2,169,734	1,962,047	+ 10.6
TOTAL OUTPUT — INCLUDING POWER PURCHASED			
SOUTHERN ONTARIO SYSTEM	1,684,269	1,608,823	+ 4.7
THUNDER BAY SYSTEM	112,585	112,700	- 0.1
NORTHERN ONTARIO PROPERTIES	<u>206,285</u>	<u>214,449</u>	- <u>3.8</u>
TOTAL	2,003,139	1,935,972	+ 3.5

MUNICIPAL LOADS, SEPTEMBER, 1947

SOUTHERN ONTARIO SYSTEM

NIAGARA DIVISION

(25-Cycle)

	H.P.	Domes- tic Con- sumers		H.P.	Domes- tic Con- sumers		H.P.	Domes- tic Con- sumers
Acton	2,489	544	Erieau	309	197	Palmerston	778	400
Agincourt	304	168	Erie Beach	40	79	Paris	2,417	1,215
Ailsa Craig	225	147	Essex	852	528	Parkhill	352	315
Alvinston	179	205	Etobicoke	16,521	6,157	Petrolia	1,225	825
Amherstburg	1,584	734	Exeter	1,140	544	Plattsville	289	118
Ancaster Twp.	616	394	Fergus	2,129	770	Point Edward	1,991	349
Arkona	117	117	Fonthill	350	300	Port Colborne	2,680	1,555
Aurora	2,022	793	Forest	830	510	Port Credit	1,310	649
Aylmer	1,635	758	Forest Hill	9,370	3,567	Port Dalhousie	1,443	691
Ayr	411	227	Galt	14,978	4,296	Port Dover	793	750
Baden	566	168	Georgetown	2,943	833	Port Rowan	162	171
Beachville	837	167	Glencoe	305	230	Port Stanley	1,126	825
Beamsville	795	399	Goderich	2,244	1,361	Preston	5,239	1,689
Belle River	360	314	Granton	90	85	Princeton	225	98
Blenheim	869	560	Grimsby	1,267	655	Queenston	207	81
Blyth	193	184	Guelph	16,486	5,703	Richmond Hill	819	414
Bolton	368	172	Hagersville	1,521	406	Ridgetown	801	599
Bothwell	210	185	Hamilton	180,450	43,700	Riverside	1,986	1,559
Brampton	4,362	627	Harriston	726	378	Rockwood	208	174
Brantford	27,380	8,337	Harrow	915	350	Rodney	225	239
Brantford Twp.	2,424	1,476	Hensall	306	210	St. Catharines	36,342	8,742
Bridgeport	312	178	Hespeler	3,787	825	St. Clair Beach	149	102
Brigden	314	125	Highgate	155	107	St. George	245	154
Brussels	322	256	Humberstone	840	738	St. Jacobs	435	141
Burford	470	235	Ingersoll	42,930	1,568	St. Marys	2,616	1,076
Burgessville	128	64	Jarvis	240	163	St. Thomas	10,487	4,718
Burlington	2,447	1,234	Kingsville	1,019	641	Sarnia	9,313	5,403
Burlington Beach	653	732	Kitchener	36,397	8,718	Scarborough Twp.	8,285	5,950
Caledonia	566	452	Lambeth	196	140	Seaforth	1,291	524
Campbellville	83	50	LaSalle	490	259	Smithville	563	185
Cayuga	287	186	Leamington	3,281	1,688	Simcoe	3,929	1,678
Chatham	10,995	4,575	Listowel	2,185	801	Springfield	124	133
Chippawa	529	364	London	52,989	19,859	Stamford Twp.	4,921	7,497
Clifford	166	130	London Twp.	775	494	Stoney Creek	482	289
Clinton	1,113	593	Long Branch	2,540	1,564	Stouffville	677	408
Comber	207	120	Lucan	298	186	Stratford	9,869	4,561
Cottam	137	131	Lynden	203	105	Strathroy	2,017	876
Courtright	83	91	Markham	563	350	Streetsville	742	208
Dashwood	170	102	Merlin	127	124	Sutton	523	468
Delaware	104	71	Merritton	12,337	962	Swansea	4,245	2,096
Delhi	754	609	Milton	2,109	555	Tavistock	883	300
Dorchester	158	157	Milverton	616	263	Tecumseh	762	711
Drayton	129	167	Mimico	3,878	2,306	Thamesford	388	147
Dresden	899	466	Mitchell	1,090	521	Thamesville	311	243
Drumbo	158	90	Moorefield	100	56	Theford	197	166
Dublin	80	61	Mount Brydges	144	166	Thorndale	163	83
Dundas	4,322	1,458	Newbury	66	70	Thorold	3,774	1,274
Dunnville	2,153	1,063	New Hamburg	880	384	Tilbury	1,138	502
Dutton	332	234	Newmarket	2,899	1,022	Tillsonburg	2,586	1,243
East York Twp.	14,304	11,918	New Toronto	13,840	2,029	Toronto	450,423	154,302
Elmira	2,246	554	Niagara Falls	14,138	4,984	Toronto Twp.	6,133	3,065
Elora	724	355	Niagara-on-the-Lake	1,327	623	Wallaceburg	6,995	1,387
Embro	263	125	North York Twp.	17,017	7,019	Wardsville	77	65
			Norwich	692	391	Waterdown	424	280
			Oil Springs	207	104	Waterford	604	397
			Otterville	208	143	Waterloo	8,715	2,306
						Watford	579	312

MUNICIPAL LOADS, SEPTEMBER, 1947

	H.P.	Domes- tic Con- sumers		H.P.	Domes- tic Con- sumers		H.P.	Domes- tic Con- sumers
Welland	12,799	3,264	Neustadt	98	110	Iroquois	476	279
Wellesley	229	137	Orangeville	1,262	746	Kemptville	565	393
West Lorne	525	227	Owen Sound	9,971	3,663	Kingston	21,392	7,867
Weston	6,452	1,700	Paisley	293	202	Lakefield	546	360
Wheatley	330	237	Penetanguishene	1,830	773	Lanark	166	173
Windsor	63,866	26,609	Port Carling	456	211	Lancaster	68	116
Woodbridge	1,061	314	Port Elgin	795	509	Lindsay	5,064	2,289
Woodstock	10,573	3,448	Port McNicoll	178	241	Madoc	381	318
Wyoming	152	166	Port Perry	602	381	Marmora	233	249
York Twp.	29,392	21,946	Priceville	25	38	Martintown	75	56
Zurich	197	149	Ripley	156	129	Maxville	164	176
			Rosseau	56	58	Millbrook	172	182
(66⅔-Cycle)			Shelburne	376	314	Morrisburg	695	444
Bronte	288	244	Southampton	805	567	Napanee	2,146	897
Oakville	2,399	1,285	Stayner	487	341	Newcastle	349	230
Trafalgar Twp.	1,013	573	Sunderland	208	140	Norwood	288	242
GEORGIAN BAY DIVISION			Tara	215	164	Omeme	308	173
(60-Cycle)			Teeswater	253	233	Oran	167	183
Alliston	774	447	Thornbury	220	257	Oshawa	24,223	6,765
Arthur	304	199	Thornton	64	67	Ottawa	43,577	15,658
Bala	487	336	Tottenham	194	161	Perth	2,535	1,110
Barrie	6,833	2,471	Uxbridge	639	423	Peterborough	23,286	6,702
Beaverton	407	331	Victoria Harbour	111	271	Picton	2,165	1,336
Beeton	165	148	Walkerton	1,529	687	Port Hope	4,167	1,455
Bradford	630	291	Waubushene	214	235	Prescott	1,738	815
Brechin	81	53	Wiarton	619	437	Renfrew	1,153	1,366
Cannington	408	262	Windsor	124	64	Richmond	148	85
Chatsworth	154	108	Wingham	1,231	560	Russell	156	119
Chesley	912	456	Woodville	151	116	Smiths Falls	4,496	2,012
Coldwater	258	159				Stirling	529	293
Collingwood	3,798	1,650	EASTERN ONTARIO DIVISION			Trenton	6,998	1,833
Cookstown	175	119	(60-Cycle)			Tweed	494	321
Creemore	253	176	Alexandria	526	415	Warkworth	111	135
Dundalk	338	210	Almonte	691	689	Wellington	598	343
Durham	686	464	Apple Hill	64	66	Westport	165	149
Elmvale	294	191	Arnprior	1,985	891	Whitby	2,324	1,054
Elmwood	156	72	Athens	194	183	Williamsburg	136	86
Flesherton	163	126	Bath	74	64	Winchester	697	309
Grand Valley	270	184	Belleville	10,538	3,939			
Gravenhurst	1,722	593	Bloomfield	259	181	THUNDER BAY SYSTEM		
Hanover	2,211	850	Bobcaygeon	83	409	(60-Cycle)		
Holstein	42	63	Bowmanville	4,184	1,234	Fort William	18,871	7,332
Huntsville	1,826	744	Braeside	255	92	Nipigon Twp.	414	243
Kincardine	1,215	741	Brighton	724	563	Port Arthur	27,610	6,099
Kirkfield	41	37	Brockville	9,358	3,101			
Lucknow	600	287	Cardinal	556	394	NORTHERN ONTARIO		
MacTier	168	128	Carleton Place	2,789	1,076	PROPERTIES		
Markdale	355	231	Chesterville	490	248	Nipissing District		
Meaford	1,286	757	Cobden	242	160	(60-Cycle)		
Midland	5,919	1,625	Cobourg	3,114	1,443	North Bay	7,799	3,379
Milma	265	184	Colborne	371	285	Patricia District		
Mount Forest	869	502	Deseronto	431	395	(60-Cycle)		
			Finch	170	107	Sioux Lookout	409	512
			Frankford	269	262			
			Hastings	228	238	Sudbury District		
			Havelock	259	295	(60-Cycle)		
						Capreol	671	344
						Sudbury	13,064	8,734

POTENTIAL SABOTAGE



COURTESY- THE EVENING TELEGRAM-TORONTO

HYDRO News

An aerial photograph of a snowy landscape. A wide river flows through the upper half of the image. Below the river, a small town or village is visible, consisting of several buildings, mostly rectangular and light-colored, scattered across a snow-covered field. There are some evergreen trees interspersed among the buildings. In the background, more trees and a forested area are visible. The overall scene is a winter landscape.

CO-OPERATING IN CONSERVATION PROGRAMME



Junior Chambers of Commerce and Boards of Trade in cities and towns across Ontario have united in an all-out effort to aid Hydro's power conservation programme. This plan to promote voluntary savings among all classes of consumers, as an important way of maintaining maximum production and employment, was launched at Guelph. At a regional meeting of the executive of the various groups representing 24 Ontario municipalities, T. E. Dietrich, District Representative of Hydro's Promotion Department, outlined the power supply situation. Each local group is now co-operating with the local utility in contacting

industries, stores, offices and homes in presenting the conservation message.

During the proceedings, the above photographs were taken. In the upper group are: left to right, Norman Bates, National Secretary of the Junior Chamber of Commerce; J'm Hill, National Vice-President; Stuart Krantz, Regional President; T. E. Dietrich, H.E.P.C.; Bern Stevenson, Toronto, appointed as liaison officer between Ontario Junior Chambers of Commerce and the H.E.P.C. on power conservation; and W. J. Bishop, Manager of Guelph Board of Light and Heat Commissioners.



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THE FRONT COVER



THIS MONTH'S cover is an overall photograph of Hydro's camp, located on the Ontario side of the Ottawa river at Des Joachims. Looking towards the Quebec shore are shown the three channels of the Ottawa river which the main dam will close. At the left of the Headquarters Camp, with its dining and recreation halls, hospital, staff houses and comfortable bunkhouses, is shown the conveyor which will carry fine and coarse aggregate from storage piles to the concrete mixing plant. Most of the concrete will, however, be mixed on the Quebec side where an ingenious Bailey Bridge construction will support the conveyors handling aggregates.

Volume 35

January, 1948

Number 1

CONTENTS

	Page
Scenes On Mississagi River - - - -	2
Page Three - - - - -	3
Hydro's In The Spin - - - - -	4
Hydro Developments In New Zealand - - -	8
New Rural Line At Chelmsford - - - -	12
Rural Superintendent Has Important Role - -	15
Hydro Power In Scotland - - - - -	18
Mitchell and Walters Leave Hydro - - - -	19
Dr. R. W. I. Urquhart's Page - - - - -	20
Awards Presented To North York Hydro Employees	21
P. B. Yates Honoured - - - - -	23
"Let's Keep It Simple" - - - - -	23
Newsmen At Aguasabon - - - - -	24
This And That - - - - -	27
Hydro Home Forum - - - - -	28
Lighter Lines - - - - -	29
Hydro At Work - - - - -	31
Monthly Load Summary - - - - -	31
Hydro News' Index - - - - -	32



SCENES ON THE MISSISSAGI RIVER



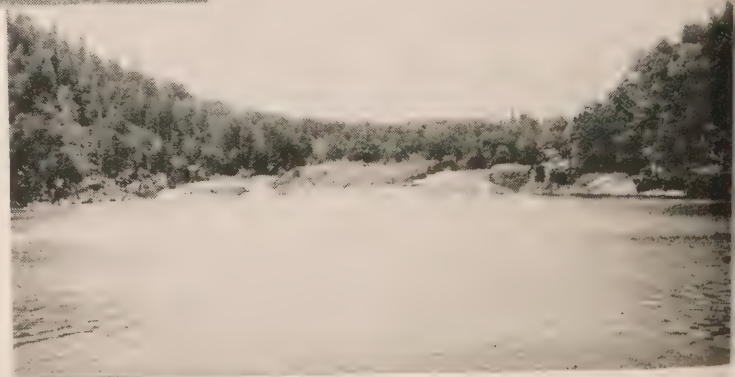
HYDRO NEWS is indebted to F. K. Dalton of the Commission's Laboratory staff for these picturesque scenes taken on the Mississagi River near Thessalon, Ontario. This one was taken at Upper Slate Falls, about ten miles downstream from the Tunnel Site where a new power plant is being built. A half mile trek from the highway through the woods leads the visitor to the brink of this waterfall.

THIS IS the canyon below the falls. At the foot of the waterfall, the river sweeps westward and flows through a narrow steep-walled canyon.



LOWER SLATE Falls, which have a drop of 17 feet, are located about half a mile below the canyon. The beautiful broad rapids, paralleling the highway, enhance the beauty of the area which is a delightful camping spot, according to Mr. Dalton.

RED ROCK Falls has a fall of 19 feet and is two miles further downstream. The parted waters appear as several sparkling white gems in a setting of reddish rocks and deep green forest.



TIME FOR RESOLUTION

The man who does not at least propose to himself to be better this year than he was last must be either very good or very bad indeed! And only to propose to be better is something; if nothing else, it is acknowledgement of your need to be so, which is the first step toward amendment.—Charles Lamb.

Since most of us are neither very good nor very bad (and thank goodness for that!), we usually make a pause at the New Year and, turning to throw a hasty, but critical eye backward at the previous 12 months, we inevitably detect certain weaknesses and then and there determine to turn over a new leaf. Mentally, we jot down a neat list of things to do and things not to do. We will stop smoking so much; we won't snap at our wives when we're tired; we won't keep such bad hours; we'll cut down our lunches for the sake of waist lines as well as finances. On the positive side we promise ourselves that we will certainly take Aunt Julia for little outings in the car more often; we will build those kitchen shelves we promised; we will pay that small debt at once—and so it goes ad infinitum.

This brave list of resolutions, including those we know right from the beginning we won't keep and those that we'll have a try at anyway, show a wistful desire on the part of the common man to improve himself.

But the trouble is that the complexity of modern life is very tough on the character! Sometimes it would seem easier, as the poets put it, "to do one grand deed and die" than it does to cope with life's daily small irritabilities and frustrations. How to keep Johnnie in shoes, how to keep from being torn limb from limb in the morning traffic scramble, how to live amiably with your in-laws because you cannot find a house, how to make Mary do her lessons when the movies are around the corner—how to do these and a thousand equivalents and keep a kindly and benevolent disposition is something that we are all trying to solve.

The only antidote against a frayed temper would seem to be the cultivation of a deep thankfulness for the basic things that are still ours in this country. We have only to stop looking nearsightedly at our small difficulties and look out at the ailing world, to be filled with deep gratitude for such things as our personal freedom and a standard of living that at the very least permits us to keep our health and human self-respect.

At this time, as we cross the threshold of the New Year, the members of the far-flung Hydro family will unite in the resolution to play their full part in the accomplishment of the tremendous tasks which have to be faced in the year 1948. Upon each individual member of the family rests a high responsibility calling for determination and unremitting effort.

So let us forget trivialities and let us resolve on this New Year's to be alert to the times; to be fully aware of our own responsibilities and good fortune; to do as much as we can to help alleviate the suffering of others; and with intelligence and goodwill seek to promote the spirit of peace and brotherhood among those with whom we come in contact.

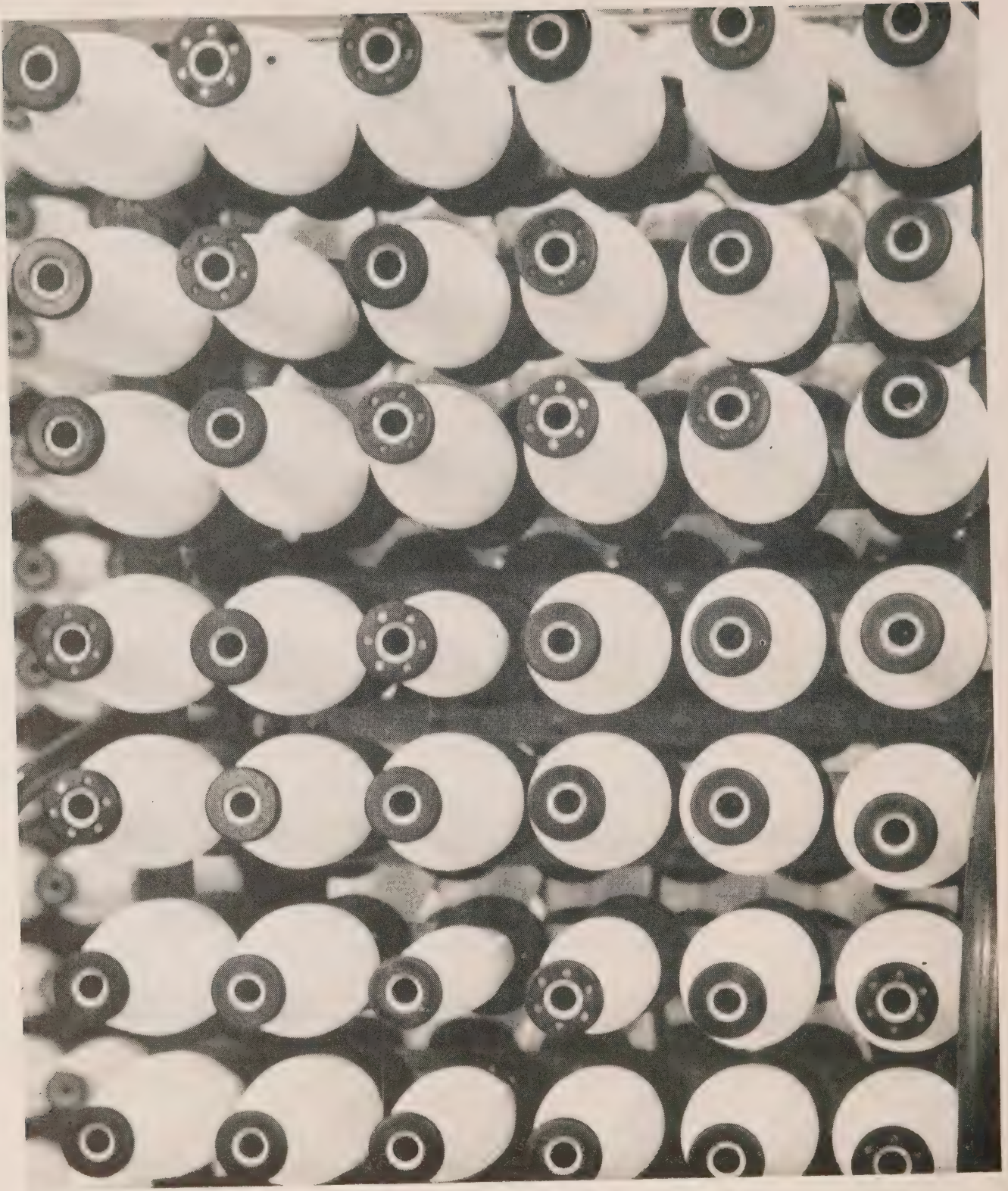
By doing these things, it can be A Happy New Year.

FRIENDS IN NEED

Co-operation in the campaign for power conservation by Junior Chamber of Commerce and Junior Board of Trade groups has been welcomed by both the Commission and electrical consumers.

Although it has introduced a modified system of power rationing, the Commission is depending very largely on voluntary power saving to bridge the gap pending the completion of new power plants. The facts concerning the present temporary situation have been presented through the medium of the Press, by letters, circulars and printed matter forwarded to the municipalities both for their own guidance and for general distribution. These facts are now being pressed home through the co-operation of this energetic body of public-spirited young men who are identified with the Junior Chamber of Commerce and Board of Trade.

With such assistance the Commission hopes to receive a more general and consistent response to its appeals for power saving. It is confident that when consumers fully realize the importance of economies in the use of electricity at the present juncture, they will form a habit of saving power whenever and wherever possible. And it is this habit of continual thoughtfulness, rather than the hit-and-miss method of turning off lights and electrical equipment just when one happens to think of it, that is most effective in enabling the Commission to fully maintain essential services while building new power developments.



WHAT'S THIS? An aerial view of milk bottles taken by some low-flying helicopter? No. These are spools of nylon yarn gathered from the spinning and winding machines of the C.I.L. Nylon plant at Kingston where Hydro power is linked with all operations and where close electrical control is indispensable to successful operation.

HYDRO'S IN THE SPIN

By Harry M. Blake,
Hydro News

Hydro has a tricky job to do at the nylon plant of Canadian Industries Limited in Kingston. It's a job of close frequency regulation. In fact, it is the key frequency job on the Commission's system. If cycle fluctuations can be kept within the low limits of tolerance demanded by Nylon, then all is well with the entire frequency-sensitive textile industry in Ontario. Since this industry, according to latest figures, employs upward of 58,000 persons representing a weekly payroll of more than \$1,700,000, the importance of Hydro's task can readily be gauged.

Exacting And Important Role

Through the good offices of R. G. Beck, Manager of the Nylon Division of C.I.L. at Kingston, a visit to the Nylon plant was arranged for Hydro News and an opportunity given of viewing the processes in which electricity plays such an exacting and important role. Before introducing us to G. T. L. Andrews, Projects Engineer, and Dr. R. D. Bennett of the Development Department, who had kindly offered to conduct us on a tour of the premises, Mr. Beck gave us a brief sketch of the circumstances surrounding the establishment of the Nylon industry in Canada.

Substitute For Silk

The first commercial plant in America was set up at Wilmington, Delaware, in 1939 by E. I. DuPont de Nemours and Company, said to be the pioneers in Nylon research. C.I.L. at once made arrangements for the importing of a limited quantity of nylon yarn for its customers, and Canadian women had just begun to admire the "sheer" beauty of nylon hosiery when the war diverted the entire production of nylon yarns to another purpose. This was the manufacture of fabric and shroud cord for parachutes—nylon having proved a satisfactory substitute for silk which was in steadily diminishing supply.

Plant At Kingston

When the Japanese came into the war against us, the sources of silk supply in the Orient were entirely cut off. Air Force stocks were running low, and it was necessary to increase the production of nylon. To meet the need, it was decided to extend the manufacture of nylon yarns to Canada, and, with the full knowledge and co-operation of the Dominion Government, C.I.L. undertook the construction of a plant at Kingston, Ontario. By arrangements with Du Pont, this plant is continuing as one of the

Milady May Not Think About Tolerance Of Cycle Fluctuation When She Buys Hosiery But It's Important — Harry M. Blake Of Hydro News Tells Why In This Yarn About Nylon.

ten operating divisions of Canadian Industries Limited and is now supplying all the nylon used in Canada.

Nylon For Parachutes

During the war the plant was entirely engaged in the production of the strong, tough yarns required for parachutes, glider tow ropes and naval hawsers. The bulk of the output was shipped to England where it was further adapted to fit the particular purposes for which it was required. Wartime production amounted to 4,700,000 pounds, which was regarded as a pretty fine contribution to the Victory effort. It undoubtedly was. Nylon yarns made at Kingston not only saved the lives of hundreds of airmen who were forced to bail out—they also enabled troops to be dropped in enemy territory for raiding purposes, to assist attack, and to disorganize defence.

Expansion Necessary

With re-conversion to peacetime objectives, the demand for nylon is showing a striking increase even over wartime requirements. The turn-out at Kingston has already been stepped up to 200,000 pounds a month, an increase of at least 20 per cent over peak production during war years.

Since 1945, 65 per cent of the nylon produced at Kingston has been going into ladies' hosiery. But the fair sex is not going to have it all its own way very much longer. C.I.L. is putting in equipment to make the kind of staple yarns men want in their socks and sweaters. This objective, coupled with the ever-increasing feminine demand, has led to a \$4,000,000 programme of expansion which is now receiving its finishing touches.

Included in this big programme are additions to the machinery required for the primary spinning operations and the finishing of the yarns, and the installation of equipment for the conversion of nylon salts into nylon flakes. This equipment has been set up and is now in operation. It is calculated that it will be the means of saving about \$750,000 a year

in United States currency requirements. In order to provide space for the new machinery throughout the plant and comfortable elbow-room for the employees, the floor area is being doubled and is now approximately 253,000 square feet.

Loads Nearly Double

Already The Hydro-Electric Power Commission is supplying Nylon with power loads nearly double those called for during the war. Since 1945—to give the precise figures—the load has increased from 1,780 horsepower to 3,400 horsepower. While no big heat or mill loads are required, there is a set-up of 700 motors, while more than 3,000 fluorescent lights—one of the biggest assemblies of its kind in Canada—provide a steady 60-cycle illumination for the 700 employees—an increase, by the way, of nearly 30 per cent over wartime personnel. Power is transmitted by the Commission at 44,000 volts, and is broken down at the Company's sub-station to 550 volts for the plant and to 2,300 volts for the pumphouse.

Involved Chemical Process

The manufacture of nylon is an extremely involved chemical process. Its constituent elements—oxygen, nitrogen, hydrogen and carbon—are derived from chemicals contained in air, water, natural gas and coal. By high pressure synthesis, two chemicals called hexamethylene diamine and adipic acid are produced by a series of chemical steps. These are combined and the resultant product is nylon salt. For ease in handling this salt is dissolved in water for shipment to plants equipped for further primary processing, and since the completion of the new installations at the C.I.L. plant, the nylon salt solution has been coming through to Kingston in tank cars from West Virginia.

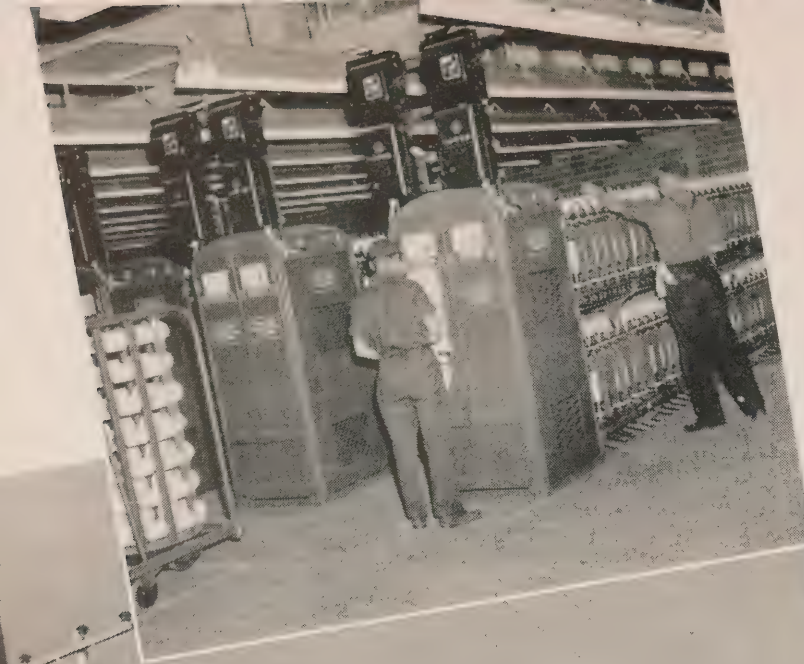
Molecular Structure

There are two aluminum storage tanks at Kingston with a total capacity of more than 50,000 gallons. The solution is pumped from these tanks to a vessel where a portion of the water is evaporated from the salt. The salt then passes into an autoclave—a piece of equipment which looks like a giant pressure cooker. Here, under electrical control, a process known as "polymerization" is carried out which gives nylon a molecular structure similar to wool or silk.

The nylon comes out of the autoclave in the form of a thick, ivory ribbon. It is cooled and hardened by a water spray

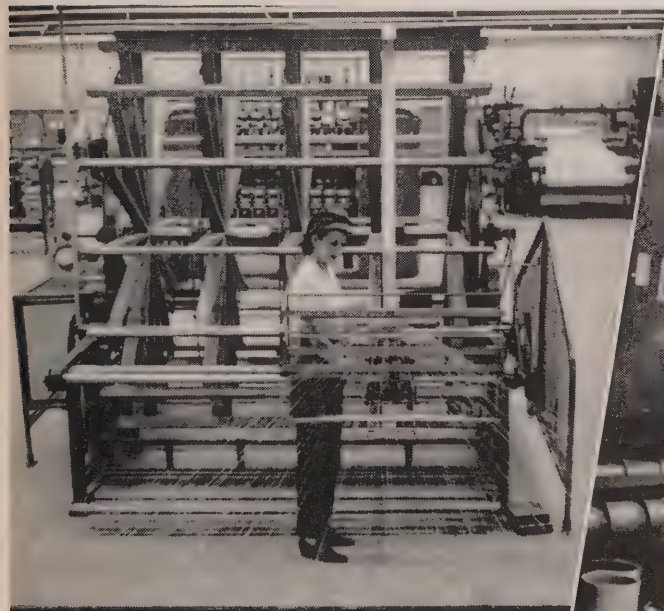
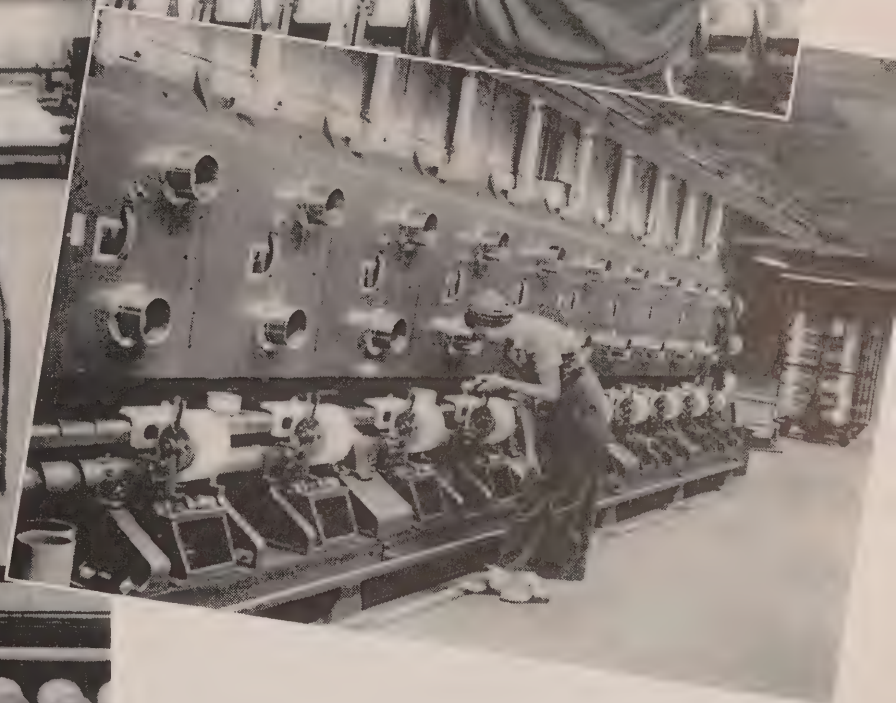
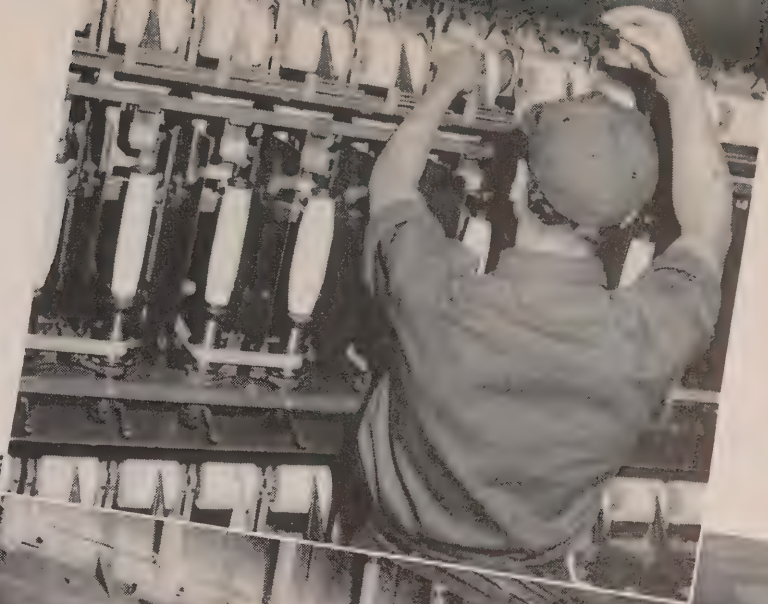
(Continued on page 26)

NOWHERE is the flexibility of Hydro power better demonstrated than at the Nylon Plant of Canadian Industries Limited in Kingston. Here electricity not only drives complicated high-speed machinery but enables the closest control to be maintained over intricate spinning, twisting and winding processes. At UPPER LEFT the speed is being regulated for an up-twisting operation so that the run of the yarn will exactly coincide with the quickness and dexterity of the attendant engaged in a manual task. BELOW is shown the Nylon Plant which is producing 200,000 pounds of yarn a month and, adjoining it, the substation where power, transmitted by the Commission at 44,000 volts, is stepped down to the required voltiages for plant and pump-house.



COMING OUT of the autoclave, where a "polymerization" process is carried out to give it a molecular structure similar to wool or silk, nylon resembles a thick, ivory ribbon. It is cooled and hardened, chopped into flake and stored until required. Then the flake is melted under pressure into a thick gummy mass for the first process in yarn making—extrusion into threads or filaments by spinners. Inspections are carefully carried out after this and all subsequent processes. At LEFT a young lady is inspecting a hobbin of nylon varn which has successfully passed previous exacting tests and is now reaching the finishing stage.

UP-TWISTING OPERATIONS call for a different number of twists according to the uses to which the yarn is to be put. It is one of the tasks where Hydro power and manual skill co-operate in a perfect working combination. BELOW, in the foreground, is one of the warping machines and in the background a series of rollers for stretching and drawing the yarns. The stretching operations ensure a closely-packed parallel formation of the nylon molecules necessary to give the yarns strength and elasticity.



WOMEN OPERATORS in smart tan shirts and turbans attend to many of the operations on nylon machines. ABOVE a young lady is engaged in removing a bobbin at one of the glistening batteries of machines which wind up nylon yarn after spinning. LOWER RIGHT, a girl is coning nylon yarn. The cones will be shipped to manufacturers for the final textile operations.



NEW ZEALAND SPEEDS CONSTRUCTION OF HYDRO ELECTRIC DEVELOPMENTS

Conservation Necessary Pending Completion Of Programme Designed To Overtake Wartime Backlog—Plans To Bring Benefits Of Low-Cost Power In All Parts Of Dominion

**By Mildred C. Redmond,
Hydro News**

New Zealand, sister Dominion to Canada, has a parallel interest in hydro-electric power and parallel plans for bringing the benefits of that power into every corner of their domain. Like ourselves, they have had a special set of problems to deal with during the past ten years. The war caused serious shortages of both labour and materials so that the projects already planned had to be postponed. Also, increased demands have made necessary the conservation of power until wartime construction leeway can be overtaken.

However, the country's first instalment of plans to increase hydro-electric power production has already been completed and further work is going ahead rapidly.

Although the whole population adds up to only one and half million, they have, in proportion to other countries, a high output of electrical power.

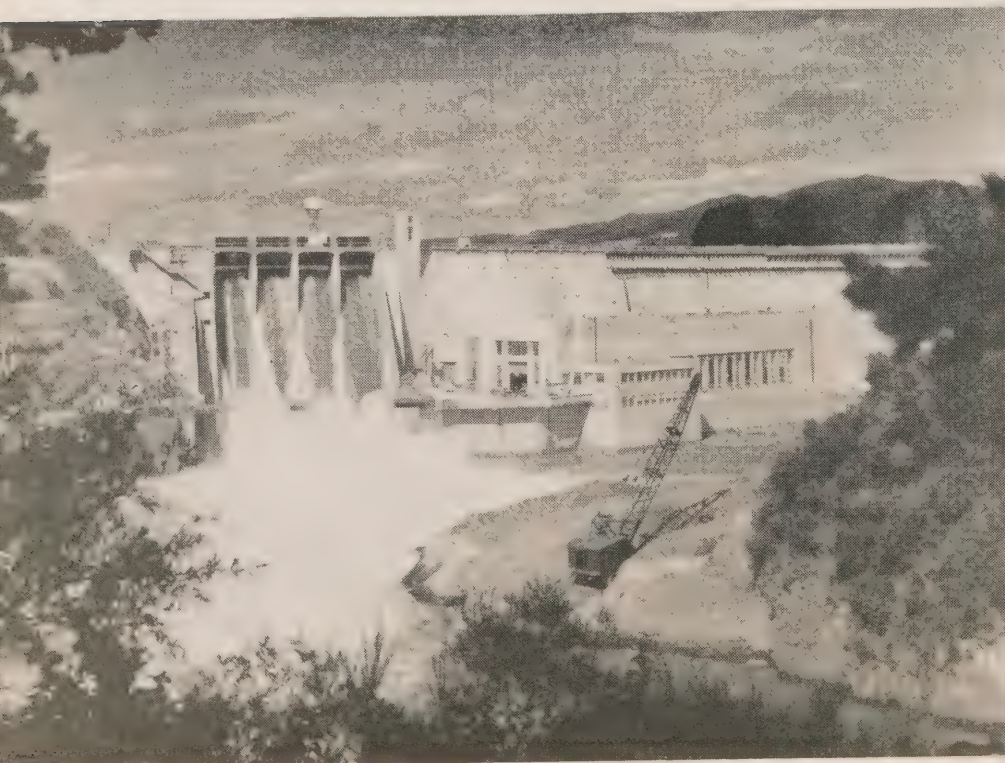
It might be interesting here to make a brief comparison between New Zealand and our own province, Ontario. Ontario has an area of approximately 300,000 square miles and New Zealand has about one third of that area. The population is in approximately the same proportion of three to one. The main geographic difference as affecting hydro developments is that Ontario is a land of forests, farms, lakes and mighty rivers whereas New Zealand is partially mountainous in character with high mountain lakes and short swift rivers. Ontario looks to its large rivers as sources of water power whereas the type of development in New Zealand is quite different.

Hydro Is State Activity

New Zealand has very fortunate natural facilities for the economic development of water power and practically the whole Dominion comes within the area of coverage of the main government generating stations. Hydro-electric power production is a state activity; the state's investment being about 30,000,000 pounds. Until 1945 the State Hydro-Electric Department was a division of the Public Works Department but now it is a department by itself.

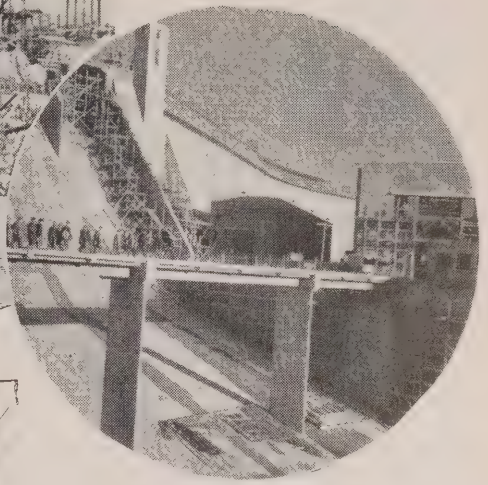
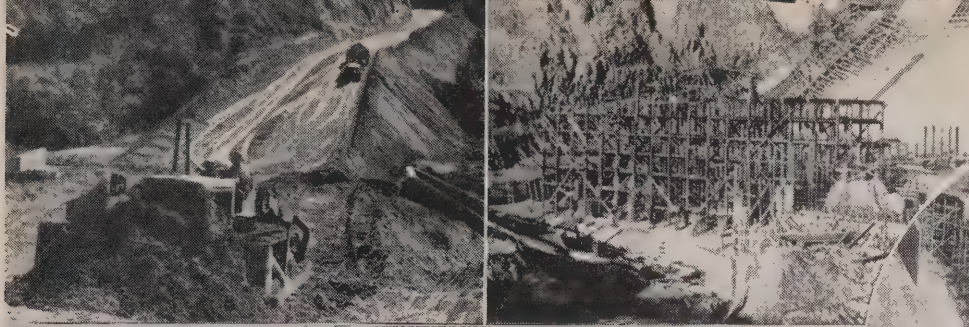
The state itself does not manage local distribution or the retail sale of electricity. It delivers the power at sub-stations when a distribution is undertaken by Power Boards. Except when the larger Municipal Councils function as Power

(Continued on page 10)



NEW ZEALAND

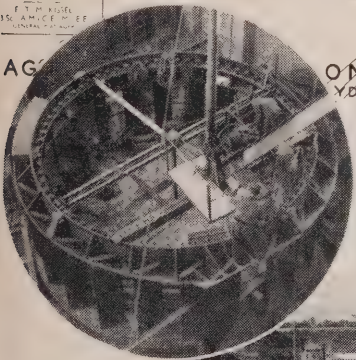
RECENTLY COMPLETED Karapiro dam and power house on the Waikato river. OUTLINE MAP of the Dominion of New Zealand.



WAIKATO RIVER

HYDRO ELECTRIC POWER DEVELOPMENT

ONE MILLION HORSE-POWER
HYDRO-ELECTRIC DEPARTMENT



MUCH OF the work at Karapiro was accomplished during the war years despite shortages. Before major work could be started access roads had to be built (upper left).

KARAPIRO DAM at an early stage of its construction. The Waikato River was diverted at this point by means of a tunnel through the bluff on the left (upper centre).

KARAPIRO POWER house, here shown in course of construction, is immediately below the dam. The bridge spans the spillway (upper right).

FITTING THE first turbine at Karapiro. This is now in operation and two others are being installed this year (lower circle).

LAST STAGE of construction work on the Karapiro dam (lower centre).

POWER HOUSE staff will be accommodated in a model village much like this one at the older established Arapuni (lower right).

NEW ZEALAND SPEEDS

(Continued from page 8)

Boards, the power districts are usually so arranged that a Board covers rural as well as urban territory so that there is an assured revenue from the settled area while development is proceeding in the more sparsely settled parts.

Low cost current is available for both domestic and industrial purposes and prices compare favourably with other parts of the world. In 1936 the average retail cost per unit was 1.75 pence and in 1945 it was 0.833 pence. This has an important bearing on living standards throughout the Dominion. In the period from March 31, 1936, to the same date in 1945, the generating capacity of the works rose from 187,000 kilowatts to 381,360 kilowatts, an increase of 104 per cent. The total of units increased from 989 millions to 2,237 millions. With an increase of 118,000 consumers there was also an increase of 75 per cent in units per consumer per annum (a rise from 2,178 units to 3,805). This is explained by the constantly increasing use of electricity in homes for cooking and heating as well as lighting. Domestic use actually accounts for the greater part of the power generated.

Another major use is on the farm. Rural use of power has always been an important feature of hydro-electric development since its early days. As far back as 1930 it was claimed that New Zealand had a rural electrical distribution second only to that of Sweden. In spite of the fact that manufacturing industries have shown rapid growth in the last twenty years,

New Zealand is still mainly a farming country. And on nearly every farm electricity is used for working both milking and shearing machines and is also used in many ways about the farm home. One important motive behind the rural policy has been to keep the young people on the farm. Like many other countries there has been a general drift of population towards the cities and the New Zealand government has sensibly decided that the best way to counteract it is to carry city advantages to the country.

Local Geography

Looking at the country itself, New Zealand consists of two main islands in the south Pacific. Although it has only 104,750 square miles it is remarkably well endowed with water power resources. The two islands lie north and south; together they are about 1,000 miles long and are on the average 100 miles wide. The generous supply of water power is due partly to well-distributed mountain systems and also to a temperate climate with a good rainfall evenly distributed throughout the year.

In the centre of North Island there is a short range of volcanic mountains about 8,000 feet high and along the eastern coast there is an additional range rising in parts to 6,000 feet. Flanking the whole western side of the South Island is a range of really high mountains with peaks as high as 10,000 and 12,000 feet.

Although North Island is not so well endowed as the South for water power, there are several large cities which are suitable for projects on a scale to meet present and future needs for a long time

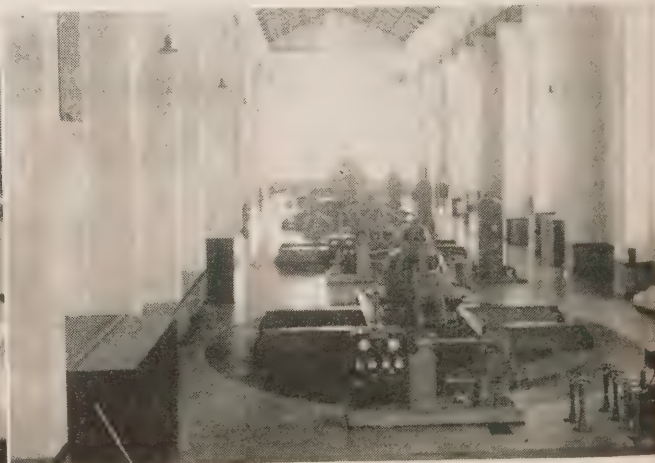
to come. Construction on these sites is going forward rapidly.

The Waikato River Project

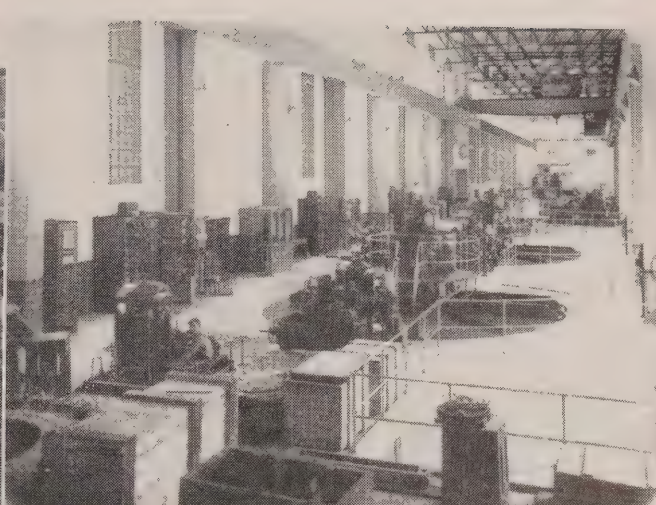
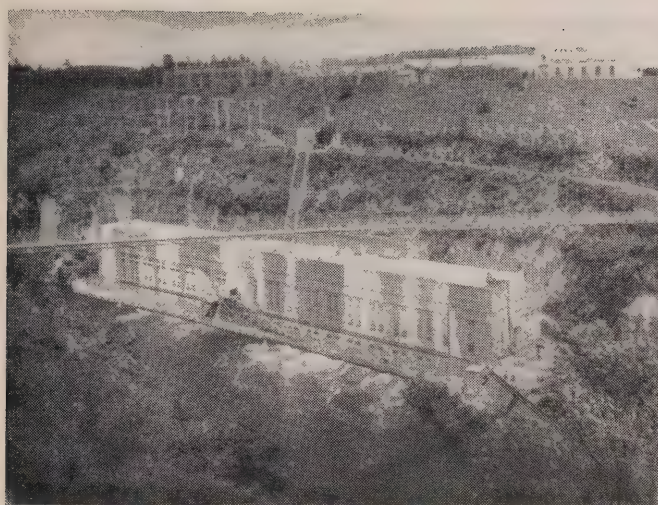
The largest river that is available for water power is the Waikato, having a minimum flow of 5,000 cfs. and an average flow of 8,000 cfs. It is the longest river in New Zealand and flows from Lake Taupo, a large lake situated in the centre of North Island and about 1,200 feet above sea level. The Waikato emerges from the lake over a series of rapids confined in a shallow gorge. The uppermost scheme on the river entails the building of a dam which will back the water up to the lake itself, raising its level and thus providing a valuable storage for other schemes down the river.

One of these is the Arapuni development. In this case a head of about 180 feet was obtained by means of a dam across the arapuni gorge. The scheme was investigated during the 1914-18 war and power was first generated in 1929. At this stage there were three vertical generating units consisting of 25,000 horsepower, Francis turbines operating on 175 ft. gross head and driving 15,300 kw, 11 kv generators at 214 r.p.m. A similar fourth unit was brought into service in 1932. These generators have since been rewound and their rating increased to 17,850 kw. Later the size of the building was doubled and four more generating units were installed. These comprise 30,000 horsepower Francis turbines driving 21,600 kw generators. The latest unit was installed in 1946.

Seventeen miles down the Waikato river one of the post-war projects has just been completed, the Karapiro dam and power



TWO VIEWS of the Waitaki scheme on the river of that name in the South Island. The concrete curved gravity dam has a spillway length of 1,160 feet and the power house forms part of the abutment on the right bank.



OUTSIDE AND inside views of the Arapuni power station on the Waikato river. The forebay, spillway and intakes are located behind the outdoor switching station as can be seen in the picture. The headrace, which is an old river bed, leads the water from the lake formed behind a concrete curved gravity dam three-quarters of a mile upstream from the power house.

station, the first of nine new dams to be built on the river. At the Karapiro station there are three units each consisting of a 42,000 horsepower vertical Kaplan turbine driving a 30,000 kw, 11 kv generator. A concrete arch dam with gravity abutments will produce a gross head of 100 feet and will form a lake right back to the Arapuni tailrace.

The old Horahora station of 11,300 kw will be submerged beneath the lake. Now that the Karapiro station is already in action the next project is under way. It will be the Maretai dam up the river from Karapiro. When the whole Waikato river project is completed the power yielded will aggregate over a million horsepower.

Further North Island Projects

The second largest source of water power in the North Island is to be found in the Waikaretaheki River fed from Lake Waikaremoana. The lake is situated in high country near the east coast of the North Island at an altitude of 2,015 feet and has an area of 24 square miles. The watershed, 144 square miles in area, is in a region of high rainfall, averaging 90 inches per annum. Since the Waikaretaheki river, which flows from the lake, falls nearly 1,500 feet in a few miles, the site offered outstanding possibilities for power development. The scheme comprises three stations, Kaitawa, Tuai and Piripaua.

Tuai was the first station to be built

and operates on a head of 675 feet. It first came into operation in 1928 with two horizontal units rated at 16,000 kw. The turbines are 28,000 horsepower Francis type, the generating voltage is 11 kv and the speed is 428 r.p.m. A third unit, generally similar to the others, but rated at 20,000 kw, was installed in 1939. Piripaua station contains two generating units that came into service in 1943 and 1944. These are vertical machines with 28,000 horsepower Francis turbines, 370 foot head, driving 20,000 kw generators at 333 r.p.m.

Third Station Nearing Completion

The third station, Kaitawa, is nearing completion and may now be in operation. It will draw water directly from the lake and will be operated on a head of 440 feet. There are two vertical units running at 500 r.p.m. and rated at 16,000 kw. An interesting feature of the scheme is that Kaitawa and Piripaua are controlled from Tuai by means of supervisory or remote control equipment.

The Waikato and Waikaremoana groups of stations will tie into the whole North Island system. So far the main transmission voltage has been 110 kv but the Waikato development necessitates 220 kv transmission. Arrangements for the 220 kv lines and sub-stations are well under way so that they will be available when the Maraetai station comes into operation. The two large centres of population that

the system serves are Auckland and Wellington.

In the South Island work has begun on the harnessing of one of the glacial lakes, Lake Tekapo. Among water power schemes already in service in the south is the Waitaki station on the river of that name. It came into service with two generating units in 1932 and two more commenced to generate power in 1940 and 1941. A fifth unit is on order to complete the installation, giving an installed capacity of 75,000 kw. Power is transmitted at 110,000 volts by means of a double circuit steel tower line which feeds South Island network at Glenavy 38 miles away. The transmission distance to the principal cities of Christchurch and Dunedin is 190 miles and 120 miles respectively, and there are a number of sub-stations at intermediate points for supplying the smaller towns and rural consumers.

South Island System

In the South Island system there is a combination of 110 kv and 66 kv transmission and 220 kv transmission is proposed for a major scheme under investigation at the present time.

The big strides being taken in New Zealand in the harnessing of water power is having a direct effect on its social life and its industry. Ultimately, hydro-electric power promises to become one of the greatest of the country's industrial resources.

Rich Farming District Marks New Era: Now Enjoys Benefits of Hydro Service

Lights Turned On For First Time In Blezard Valley Area Of Sudbury District By Premier George A. Drew—Impressive Ceremony At Chelmsford Highlights Great Event—56 Miles of New Rural Distribution Lines Will Eventually Supply Power To More Than 500 Consumers.

One of the most dramatic moments in the history of the Sudbury district took place on Saturday evening, November 8, when Premier George A. Drew pressed a switch and electric lights came on for the first time in the Chelmsford area.

The impressive ceremony took place in the parish hall of St. Joseph's Catholic Church at Chelmsford, 15 miles northwest of Sudbury. While an expectant throng of district residents watched, two pioneer women of the district blew out the candles and lanterns that illuminated the hall. In the hushed darkness they waited while Premier Drew reached for the switch that sent power coursing along some 56 miles of rural Hydro line from Larchwood to Hanmer.

Inauguration of this new rural distribution line in the Sudbury basin marks

a new era in the lives of the people in the town of Chelmsford and the townships of Capreol, Hanmer, Blezard, Rayside and Balfour. Built at a cost of \$200,000 the new distribution line will serve 360 consumers, made up of 160 village and 200 farm users. It is expected the number of consumers will be increased to more than 500 shortly.

Approved In 1941

Approval for the new line was first given in 1941 but all rural construction was postponed due to the war. Therefore, it was not until late in 1946 that work was actually started on the extension. Employing local labour, the H.E.P.C. construction department and W. E. Anderson, superintendent of the Sudbury rural operating area, pushed construction of the new line as quickly as the availability of material permitted.

It was necessary to construct a 600 kilowatt transformer station at Val Caron to step down the voltage from 22,000 to 6,900/12,000 volts. This distribution station cost approximately \$23,000.

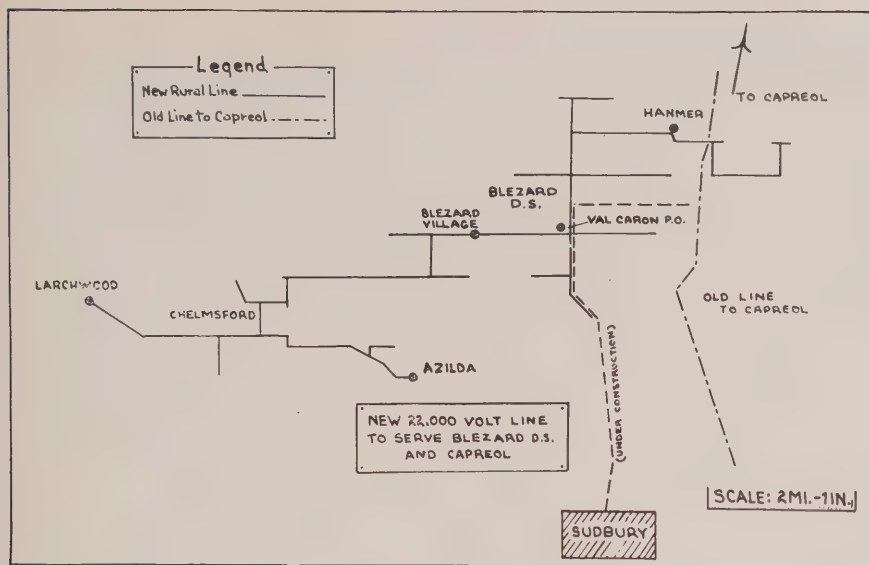
Up to the present, the Sudbury area has had 45.7 miles of rural line serving 1,909 consumers. The new distribution line of 56 miles more than doubles the length of the existing one.

Marking the significant event, Rev. Father L. Seguin, parish priest at Chelmsford, sponsored a pioneer style dinner. Huge bowls of pea soup and beans, ragout, platters of blood sausage, home-made bread, doughnuts and apple and pumpkin pie were prepared for the banquet by women of the parish.

Guests of honour at the dinner included Hon. George A. Drew, Charles McCrea,



ELECTRIC LIGHTS came on for the first time in the Chelmsford area, northwest of Sudbury, recently when Premier George A. Drew turned the switch to bring Hydro power to more than 300 rural consumers along a 56-mile line from Larchwood to Hanmer. The Premier is shown here talking to Rheal Belisle, Reeve of Rayside Township, before the ceremony when oil lamps and candles provided the illumination in the hall where a hearty pioneer dinner was served. Left of the Premier is Joseph Gratton, Mayor of Chelmsford.



THIS DIAGRAM shows the new 56-mile rural line which was officially opened by Premier George A. Drew recently. It is expected that those who will enjoy benefits of Hydro power in this district will number more than 500 in the near future.

THERE WILL be no more hand-pumping of water for Origene Prevost, this Chelmsford farmer, shown below beside his pump. This tiresome chore will now be performed by electricity as a result of the opening of the new rural line.

former M.P.P. for Sudbury District and Minister of Mines; W. E. Mason, pioneer publisher of the Sudbury Daily Star and others who had worked to bring Hydro to the district. Guests of Father Seguin were the mayors and reeves of the surrounding towns and townships. These included the towns of Chelmsford and Capreol, the townships of Chelmsford, Blezard, Capreol, Hanmer, Rayside and Balfour and the villages of Azilda and Val Caron. In addition, the guests included leaders of the business and industrial life of Sudbury and the Nickel District, all vitally interested in bringing power to the rural areas.

Symbol Of New Possibilities

Flanking Premier Drew at the table were Joe Gratton, Mayor of Chelmsford, and Rheel Belisle, Reeve of Rayside township, both sons of pioneers. In a brief address after the meal, Premier Drew said that it was easy to understand the robust health of the district residents if the meal were any indication of their normal meals.

After turning on the power in the district at 8.45 p.m., Mr. Drew stated that the coming of Hydro to the area symbolized the new possibilities for the development of farm life. "It is essential that living conditions on the farm be made more attractive," he said, "to keep the young people here. Hydro is one of the major ways of accomplishing this objective."

"The recently announced rationing of power in Ontario need cause no pessimism," stated Mr. Drew. "The move has been made necessary not so much by a shortage of power in Ontario, as the fact that Ontario is developing faster than any other part of the world today. So great has been the industrial and rural expansion since the end of the



MARKS NEW ERA

(Continued from previous page)

war that Ontario is now using 500,000 additional horsepower—25 percent more than at the peak of the war load.

"Since 1945 there has been the greatest expansion in Ontario this province has ever known," the premier continued. "Everyone realizes the need for power in homes, in industry and on the farm. It is to ensure enough for these and to maintain full employment that rationing has been introduced."

Hinting at further Hydro expansions in the Sudbury district, Premier Drew said he hoped to be invited back in the "measurable future" to perform similar duties for other parts of the area.

For Mr. McCrea the evening was in the nature of a triumphal homecoming. Many years ago, during Mr. McCrea's years as Minister of Mines in the Ontario cabinet the first agitation started for securing rural hydro in the Chelmsford-Hanmer-Larchwood areas. Mr. McCrea recalled his first visit to "The Valley" in 1901, travelling with a horse and buggy, axle-deep in mud. He compared the fine roads enjoyed today and spoke feelingly of the contribution made to the district by the scores of pioneer French-Canadian settlers who had opened up the district by their perseverance and effort.

Mr. McCrea emphasized the friendly spirit which had always prevailed in the district. Even during the bitter election campaigns of the past, he recalled, once the issue was settled there had always been a genial "burying of the hatchet" with all working for the benefit of the community as a whole.

One of the best known figures in The Valley, Mr. McCrea still boasts a host of intimate friends in the district. He recognized hundreds by their first names on Saturday night and gloried with them in the achievement of securing rural power which will do so much to make life easier and more enjoyable for the residents of the Chelmsford-Hanmer-Larchwood areas.

COMING OF HYDRO "A HAPPY EVENT"

Settlers began to move into Blezard Valley in the Sudbury District just 50 years ago. W. E. Mason, pioneer publisher of the Sudbury Daily Star, told Hydro News in commenting on the opening of the new rural Hydro line in that area on November 8.

The new 56-mile distribution line is



WITH THE advent of Hydro power in the Chelmsford-Hanmer area, the task of filling oil lamps, as depicted above by Mrs. E. Laurin of Azilda is now only a memory for the families to whom Hydro has become available.

now supplying Hydro power to over 300 consumers in the townships of Azilda, Rayside, Chelmsford, Larchwood, Blezard Valley and Hanmer.

Pointing out that the settlement of this area started following construction of the C.P.R. line, Mr. Mason stated: "The valley is about 25 miles wide and 40 miles long and lies between the north and south nickel range of hills. It was a beautiful area of red and white pine, some of the best ever produced in Northern Ontario. Today it is almost wholly cleared and has become a rich, fertile agricultural area. About 90 percent of the population is French-Canadian, the balance being English-speaking with the odd Polish farmer."

"The turning on of electric power throughout this area was a most happy event and the people certainly demonstrated their thanks and appreciation," adds this veteran newspaperman.

EIGHT ARE FETED UPON RETIREMENT

Eight employees of the Commission's Operating Department who are retiring and whose combined service totals approximately 220 years, were feted at a dinner in St. Catharines recently.

Some 200 fellow-employees felicitated "the class of '47" as they were individually introduced by the chairman of the evening, Frank E. Cooper.

Those retiring are: J. E. Pysler, Fred Guinther, T. C. Bradley, T. H. Brough, George Henry James, Robt. W. Neal, William Shee and Wm. C. MacGregor.

A. S. Robertson, Manager of the Niagara Region, on behalf of the staff presented each of the men with a well-filled bill fold and extended appreciation and good wishes from The Hydro-Electric Power Commission of Ontario.

RURAL SUPERINTENDENT HAS IMPORTANT ROLE

Expansion Of Hydro Brings With It Tremendous Responsibilities, Says Hon. George H. Challies, First Vice-Chairman, In Addressing Conference Of Superintendents Of Rural Operating Areas—Rural Described As One Of The Most Important Of The Commission's Operations.

When the present postwar construction programme is completed in the next few years The Hydro-Electric Power Commission of Ontario, although operating only within the confines of Ontario, may be the largest single corporate entity in the entire Dominion of Canada.

This fact was emphasized by Hon. George H. Challies, First Vice-Chairman of the Commission, when addressing the conference of Superintendents of Rural Operating Areas last month.

Attractive To Young People

Expansion, he told his audience, brought with it tremendous responsibilities, and rural was one of the most important of the Commission's activities. There was every likelihood that in the next few years there would be 30,000 miles of rural primary lines and 265,000 rural Hydro consumers. The speaker stressed what that would mean in rela-

tion to the standard of living in the Province of Ontario. Farms, with all the conveniences and facilities made available through electricity, would be more attractive to young people.

Important Role

Mr. Challies next stressed the important role of the Rural Superintendents. "Upon your shoulders," he said, "rests, in a large measure, the success of the programme in the next few years. You have the interest, enthusiasm and energy to put it over. We have to realize in this complex life we are living that the success of any measure depends upon our attitude to the public. We can gain a reputation for ourselves and for the Commission by our outlook, by our viewpoint and in our dealings with the public."

Leading Citizens

Mr. Challies expressed the belief that

the rural superintendent, because of his technical knowledge and training should be one of the leading citizens in his municipality. He should have the farmer coming to him to discuss problems and the Rural Superintendent should be able to tell the farmer how to solve them. The speaker said that he visualized the Hydro Rural Superintendent being comparable to an agricultural representative.

Great Scope

"There is great scope for you Superintendents," he continued, "to sit down with farmers in their farm forums, to tell them how best to use the energy available, to see that their wiring is inspected frequently and to make suggestions concerning the equipment they use."

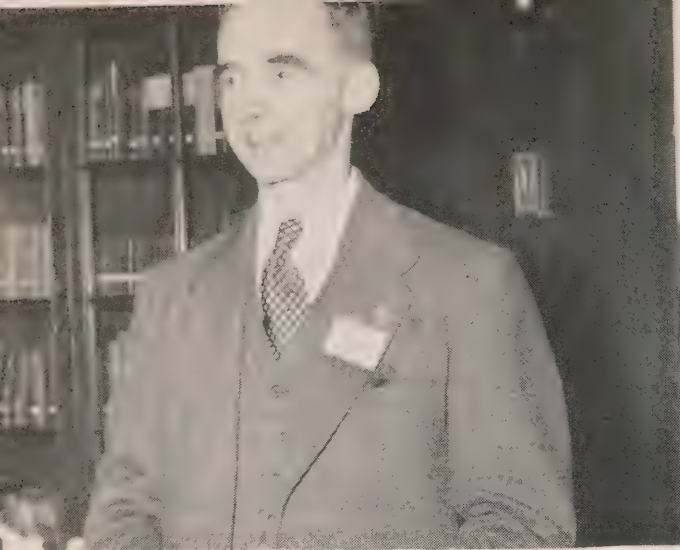
Help Make People Happier

By giving that kind of service, Mr. Challies said that the Rural Superintendents would be helping make the people happier and more contented and, at the same time, they would be helping get the most out of their Hydro service.

RURAL SUPERINTENDENTS VISIT LINEMEN'S SCHOOL



SUPERINTENDENTS OF Rural Operating Areas throughout Ontario visited the Linemen's Training School during a two-day conference in Toronto. The photo above was taken as the Superintendents arrived at the school which is located on the outskirts of the city.



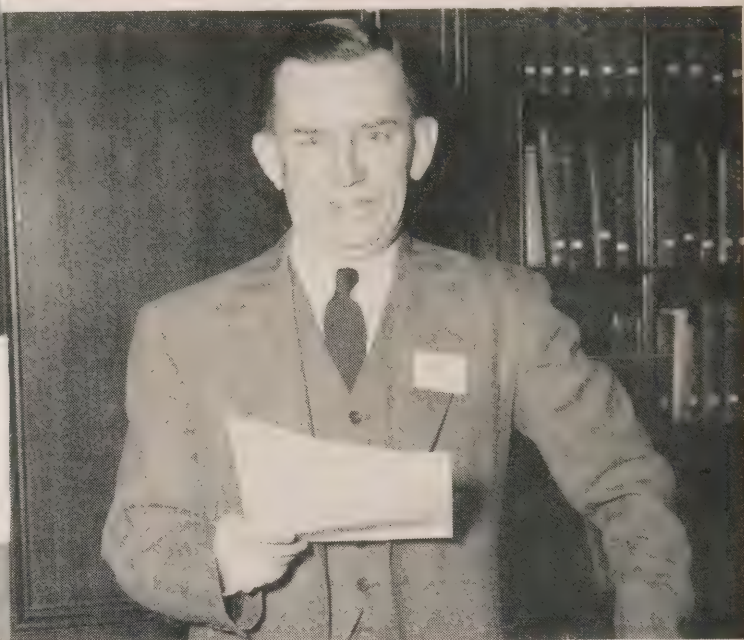
FIRST ESSENTIAL in Hydro's construction programme is manpower, David Forgan, Construction Engineer, (above), told Rural Superintendents at the conference in Toronto.



CHALLENGING RURAL Superintendents to play their full part in the development of Hydro throughout Ontario, Hon. G. H. Challies, First Vice-Chairman of the Commission, (above), stressed the important role of Superintendents in their communities.



RURAL SUPERINTENDENTS will play an increasingly important role in Hydro's gigantic expansion programme now underway, A. H. Frampton, Director of Engineering, (below), told Superintendents at their conference in December.



RE-ORGANIZATION OF the internal structure of The Hydro-Electric Power Commission of Ontario was outlined by A. W. Manby, Assistant General Manager, Administration, (below).



LEADING DISCUSSIONS at the conference were, (left to right), H. D. Rothwell, Special Assistant, Regions; V. A. Beacock, Rural Service Engineer, chairman of the conference and M. J. McHenry, Director of Consumer Services.



TRITE BUT true, the title of the picture on the left might be "the long and the short of it!" In any event, it depicts W. F. McTavish, Shelburne, left, as he greeted his taller colleague, M. D. "Monty" Kaye, Matheson, while attending the conference.

CHATTING DURING a short intermission at the conference, the group shown below includes, left to right, E. R. Lawler and R. M. McKenzie, of Toronto, both newly-appointed Regional Managers and S. A. Ord, Brantford.



SERVICE TO Hydro totalling over 90 years is represented by this smiling quartet. Left to right, they are, C. G. Corbett, Huntsville, 16 years; R. E. Hughes, London, 25 years; E. A. Hodgson, Ridgeway, 30 years, and S. H. Hornby, Bracebridge, 24 years.

MEMBERS OF the initial executive of the Rural Superintendents' Association are shown below. They are, left to right, K. O. Hansler, Orillia; Harry Tideman, Barrie; S. H. Hornby, Bracebridge; R. E. Hughes, London, and J. B. Saunders, Stayno.



ENJOYING THEIR can jokes, a group of Rural Superintendents and other H.E.P.C. personnel are depicted below during their December conference. This group includes, left to right, C. L. Mylks, Delta; G. E. Whitaker, Brockville; G. R. Webb, Plantagenet; O. S. Luney, Toronto; J. R. Claughton, Ottawa; W. P. J. Derham, Arnprior and G. K. Saunders, Perth.



PHOTOGENIC RURAL Superintendents were on hand for the lower photograph. The group includes, left to right, A. L. Baltzer, Chatham; J. Montgomery, Fenelon Falls; Carl Tumelty, Wallaceburg; W. B. Ford, Blenheim; Oliver, Dorchester; E. A. Hodgson, Ridgeway; W. B. Hughes, London; G. C. Allen, Sarnia; B. H. Hankinson, Bothwell; F. V. Martin, Essex; H. E. Chapman, Kingsville and Sam Moffat, Forestburg.



EXTENSIVE HYDRO-ELECTRIC DEVELOPMENTS NOW TAKING SHAPE IN SCOTTISH HIGHLANDS

Large Scale Economic Revival Discussed By Rt. Hon. Thomas Johnston, Chairman Of The North Of Scotland Hydro-Electric Board, in Interview With Hydro News

By Mildred C. Redmond,
Hydro News

There is a big plan afoot in the Highlands of Scotland these days. It is, in brief, a large-scale economic revival based on extensive hydro-electric developments. Hydro News was able to learn something of these activities from the Rt. Hon. Thomas Johnston, former Secretary of State for Scotland and at present, among other things, Chairman of the North of Scotland Hydro-Electric Board, who was a recent visitor in Canada.

Mr. Johnston is keenly interested in this scheme and foresees that it will have far-reaching results in the life of his country. The capacity of hydro-electric generating plant ordered by the Board at the end of 1946 totals 374,000 kilowatts. On its completion there will be electric power not only throughout the Highlands but also in those outlying islands whose very names have a romantic sound for Canadian ears—Skye, Arran, the Hebrides, the Orkneys and the Shetlands.

Behind the new project is the North of Scotland Hydro-Electric Board which is an independent body and has as its domain the whole northern section of Scotland and takes in seventy-three per cent of the entire area of the country. The south of Scotland is grouped with England for power distribution purposes and both draw all their power from the great central grid system. Acting as liaison between the two organizations, the chairman of the Northern Board sits on the Grid Board.

Market Guaranteed

One of the unique features of the Highland scheme is that it has a market guaranteed by an act of parliament. After the domestic and industrial needs of the Highlands are taken care of, the Grid has guaranteed to purchase the balance of the power. Not only have they agreed to buy it but they will buy it at a rate which is the equal of their own lowest steam-coal plant price. Therefore, the difference between what it costs the Northern Hydro-Electric Board to produce the power and the rate of the most efficient of the steam coal plants will be a



HIGHLAND COMMUNITY typical of those that will be electrified by the North of Scotland Hydro-Electric Board.

straight profit for the North of Scotland Board. At the same time, the Grid will be purchasing their power at an advantage, that is, at their own cheapest rate and, therefore, no one is at a disadvantage. The profit made in this way will be turned back at once to provide power for rural areas that otherwise could not afford it. The North of Scotland Board will plan to have a balanced budget at the end of each year by this system.

The Board is already raising money for its projects by issuing a loan to the public. Last summer the first loan went out for five million pounds, at par, two and a half per cent. The people of Scotland subscribed on an average of 14 shillings per capita of the entire population. The small balance unsubscribed will be borrowed from the Scottish banks.

Islands Included

The policy of the Board is, first, to supply electric light to the people of the Highlands, including the islands and to do it at as low a rate as in any other part of Great Britain, in short, to aim at equalizing lighting rates all over the country. Secondly, they want to give the benefits of power to these same Highland people to help lighten the drudgery of their lives. Many of the amenities of civilization have passed them by and very often they are living under extremely primitive conditions. The Board is preparing to educate them in the uses of electricity and when they are ready to supply power to a certain district they hold an exhibition in the locality and demonstrate all the latest in electrical

(Continued on page 22)

MITCHELL AND WALTERS LEAVE HYDRO: ACCEPT HIGH POSITIONS IN BUSINESS

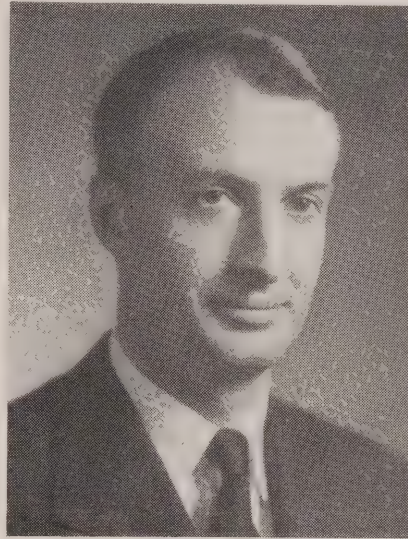
Keen regret has been voiced by Hon. George H. Challies, First Vice-Chairman of The Hydro-Electric Power Commission of Ontario over the decision of two highly regarded officers of the Commission to accept the offer of important posts with other enterprises. It is realized, however, as only natural that the splendid record of these executives with Hydro should have attracted outside attention, and they are leaving with the Commission's best wishes for careers of continued success.

Osborne Mitchell, Secretary of the Commission since 1938, has taken over the position of Secretary of the Brazilian Traction, Light and Power Company, Limited, as from January 1; while John V. Walters, Treasurer of the Commission since 1943, is leaving on January 31 to join the Bank of Montreal.

Mr. Mitchell is a native of London, England. He attended Sayer School, Hackney Institute and the Northampton Engineering College of the University of London. Coming to Canada, he joined the staff of the Commission in 1923, serving for four years as a draftsman on electrical design. He resigned from this position to become Assistant Editor of Electrical News and Engineering, subsequently taking over the editorship of this and other technical publications. He was Editorial Director of the Hugh C. MacLean Publications when the offer came from the Commission to rejoin Hydro as its secretary.

Well-known in engineering circles in both Canada and the United States, Mr. Mitchell has served on the Executive of the Association of Professional Engi-

neers and on the Executive of the Toronto section of the American Institute of Electrical Engineers. He is a man of wide cultural interests, with a fondness for horticulture, literature and art.



E. B. Easson

E. B. Easson has been appointed Acting Secretary to perform the duties of the position vacated by Mr. Mitchell. Mr. Easson has served the Commission in various capacities over a period of 17 years, broken only by four years of war service. From September, 1946, until his new appointment on January 1 of this year, he had been an assistant to the General Manager.

Mr. Easson was born in Ottawa and attended elementary and secondary schools in that city. Proceeding to the University of Toronto, he graduated in Commerce and Finance in 1930. Shortly after receiving his degree from his Alma Mater, he joined Hydro and was assigned to duties in the section now known as the Municipal Accounting Department. Enlisting in the Royal Canadian Air Force in 1942, he saw service on the Pacific Coast and Overseas as a member of the Air Staff Branch. Rejoining the Commission in 1946, he was soon afterwards appointed to the staff of the General Manager. Mr. Easson has something of a penchant for book collecting, and, on the physical side, maintains the balanced interest of the normal cultured Canadian in outdoor recreations and sports.

Like Mr. Mitchell, Mr. Walters, who is vacating the post of Treasurer of the Commission, was born in London. He was educated at Cranleigh School in

Surrey, and after considerable banking and commercial experience in London and the North of England became associated with the Bank of Montreal. With the exception of one year in the Maritimes, his continuous service of thirteen years with this institution was identified with securities work, economic studies and the preparation of statistics at headquarters in Montreal. In 1942 he left the Bank of Montreal to join the Commission as Treasurer, the appointment being confirmed in the following year.

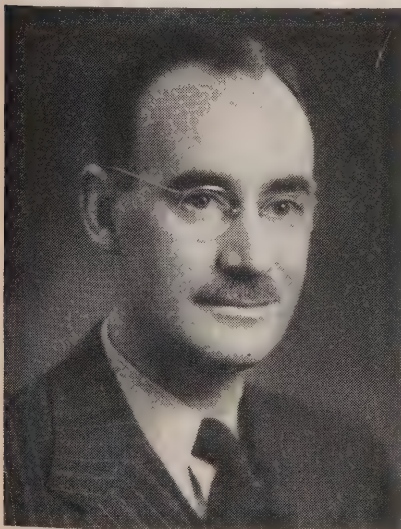
During Mr. Walters' five-year tenure of office, the Treasury Department of the Commission has been reorganized on lines consonant with the growth of Hydro. Mr. Walters has acted as advisor on financial policies and has looked after the flotation of securities and the handling of investments. His counsel, based on sound business principles, has won many encomiums and given prestige to the department he serves.

Mr. Walters is a Certificated Associate of the Institute of Bankers (London, England), a Fellow of the Chartered Institute of Secretaries and a Fellow of the Canadian Bankers' Association. He holds the Association's diploma in Advanced Foreign Exchange—an honour reserved for those with a precise and intimate knowledge of the systems and methods of International finance. Mr. Walters' leisure hours are mostly spent in the reading calculated to broaden the horizons of his own chosen vocation.

Mr. Walters is not leaving the Commission until January 31, and as yet no announcement has been made with regard to his successor.



J. V. Walters



Osborne Mitchell



by **DR. R.W.I. URQUHART** MEDICAL DIRECTOR

FIRST AID (Cont'd)

In the previous article on First Aid, it was pointed out that the first danger in a wound is infection. Measures to be taken to prevent infection were discussed.

The second danger from wounds is bleeding or haemorrhage. Bleeding is of three varieties, capillary in which there is a steady oozing of blood, venous in which there is a steady flow of dark red blood, arterial in which bright red blood is shot out in jets. The first two types of bleeding are not usually serious but the last, arterial bleeding, can rapidly become so.

The second great principle in the treatment of wounds is to control bleeding. Capillary and venous bleeding are readily controlled by the pressure of the dressing and bandage, additional padding being applied if necessary. Arterial bleeding is more difficult to control, although again direct pressure over the dressing and pad is usually effective. Where this is not successful, pressure may be applied at some point closer to the heart than the bleeding point. In the case of a limb, a tourniquet or bandage so arranged as to press the artery against bone, may be tightened sufficiently so as to stop bleeding. Care must be taken to see that it is loosened at the end of twenty minutes. If bleeding starts again, it may be tightened up again. The common nose bleed can usually be controlled by firm pressure on the side of the nose from which the blood is coming.

The third danger from wounds is shock. By this is not meant electrical shock, but the collapsed condition that accompanies or follows severe injury. It may be partly organic in origin. In shock the patient looks pale and anxious and is covered with cold perspiration. The pulse is weak and may be irregular.

Third Principle

The third great principle in the First Aid treatment of wounds, therefore, is to prevent shock. The nervous factor can be controlled to some extent by reassurance and knowledge that what needs

to be done is being done efficiently. Warmth and rest are essential. The patient should be kept lying down, the head low. Blankets and hot water bottles should be placed around the patient. Stimulants such as strong tea or coffee or aromatic spirits of ammonia ($\frac{1}{2}$ teaspoonful to $\frac{1}{2}$ glass of water), may be administered if the patient is conscious and able to swallow.

These three dangers are present in every wound regardless of magnitude. If this fact is recognized, and the simple measures to be taken to combat them remembered and carried out, much lost time and discomfort can be prevented.

This brings me to the question of First Aid kits and their contents. Several sizes of First Aid kits have been carefully chosen for various purposes and locations within the Commission. There is for instance, the small pocket kit to be carried by individuals on patrol in isolated areas. There is the larger kit for Commission trucks and cars, and the still larger kit for First Aid posts in camps, stations, etc. Actually the only difference between these kits is the amount of material included in each one and this is obviously dictated by the practical size of the container.

Purpose of Kits

The purpose of these kits is to provide material so that the simple measures mentioned above can be carried out wherever and whenever an injury occurs. Each kit provides, for example, in varying amounts 2 per cent iodine to apply around a wound to help combat infection. It also provides sterile dressings in compressed form and in various sizes and amounts so that a wound can be covered and kept covered. Bandages of various sizes, and adhesive are included so that these dressings can be kept in place. The larger kits contain the useful triangular bandage which can be used in a variety of ways to hold dressings in place, to serve as a sling or, if need be, a tourniquet. Small amounts of aromatic

spirits of ammonia are provided in ampule form for use as a stimulant in fainting or to prevent shock.

It is thought worth while to list the contents of the kits presently in use. It has been found necessary to introduce a new form of kit with a new type of packaging. The packages will fit into the older kits satisfactorily.

Pocket First Aid Kit (No. 9)

- 1—3" x 5 yds Bandage
- 1—2" x 5 yds Bandage
- 1—1" x 5 yds Bandage
- 3—3" x 3" Dressings
- 1—Roll adhesive
- 6—Adhesive Compresses
- 2—Ampules ammonia inhalants
- 3—Ampules iodine

Truck or Car Kit (No. 2)

- 16—Waterproof adhesive compresses
- 4—1" x 6 yds gauze bandage
- 2—2" x 6 yds gauze bandage
- 2—Triangular Bandages
- 10—Iodine Brushes
- 10—Ampules ammonia inhalants
- 8—Plain gauze pads 3" x 3"
- 2—Rolls adhesive $\frac{1}{2}$ "
- 6—Safety pins
- 1—Eye dressing packet
- 2—Tubes burn dressing
- 6—Tubes Boric Acid ointment
- 4—Pkgs absorbent cotton

Large First Aid Kit (No. 1)

- 48—Waterproof adhesive compresses
- 4—1" x 6 yds gauze bandage
- 4—2" x 6 yds gauze bandage
- 1—4" x 6 yds gauze bandage
- 3—Triangular bandages
- 18—3" x 3" gauze dressings
- 20—Iodine brushes
- 10—Ampules ammonia inhalants
- 1—Scissors tweezers
- 10—Paper cups
- 2—Rolls $\frac{1}{2}$ " adhesive
- 6—Safety pins
- 1—Eye dressing packet
- 2—Tubes burn dressing
- 2—Tubes Boric Acid ointment
- 4—Pkgs. absorbent cotton
- 1—Wire splint

TRAGEDY AVERTED BY PROMPT ACTION



PRESENCE OF mind and quick action averted a tragedy in North York Township and won special recognition for two employees of the local Hydro Commission. The awards were made in the Township Hall on December 12 when Wills MacLachlan, Vice-Chairman of the Industrial Relations Committee of the Canadian Electrical Association, presented the Association's medal to Line Foreman P. Parnam and a Certificate of Assistance to Lineman George McRae. C. H. Proctor, Superintendent of the Hydro-Electric Commission of the Township of North York, mustered his entire field staff for the occasion. On April 15 McRae and a companion, W. G. Taylor, were engaged in dismantling a consumer primary line when Taylor contacted a live circuit. Under instructions from Foreman Parnam, McRae jerked Taylor clear by his body belt and dropped him into the foreman's arms. Parnam started prone pressure resuscitation without a moment's delay. Within four minutes Taylor had recovered consciousness and was soon breathing normally again. Dr. Murray of Weston, who subsequently attended the patient, was high in his praise of the successful rescue effort.

TESTIMONIAL DINNER FOR R. M. McKENZIE



IN THE upper left illustration, J. R. Sullivan (centre) Manager of the Woodstock Public Utilities Commission, who acted as master of ceremonies at the testimonial dinner held in London recently for R. M. McKenzie, (left) recently appointed Manager of the Hamilton Region, tries out one of his after-dinner stories on Mr. McKenzie and R. M. Laurie.

LED BY Piper James Hamilton, who is on Hydro's rural staff, friends of Mr. McKenzie filed into the hall where the dinner was held. It was on this occasion that R. M. Laurie, the new Manager of the London Region, was formally introduced.

H. R. VIGAR, (right) Superintendent of the Woodstock Rural Operating Area, presented Mr. McKenzie with a book which was signed by every member present. Along with this memento an engraved silver tea service was later presented.

CONDUCTED BY J. W. Peart, General Manager of the St. Thomas Public Utilities Commission, the boys eventually "gave out" with some real harmony, particularly when they reached the last lines of each song. Recognize anybody in this quintet?

SCOTTISH HIGHLANDS

(Continued from page 18)

equipment, ranges, refrigerators, irons and so forth.

A good percentage of the Highland population are crofters, or small farmers and it is expected that electricity will bring considerable benefits to them. An interesting and unusual use of electricity that has already been turned to advantage, is hay drying. It has been proved that the old method of drying hay, that is turning it over and over in the fields, is both wasteful and is accompanied also by a high protein loss. The process of

electric drying cuts both loss of protein and bulk loss and the farmers are learning to make good use of it.

After the local population has been supplied with power, the next customers to be served will be industries, both existing ones and those that are now being encouraged to move north. Already a variety of industries are planning to move into the Highland area, particularly metallurgical and chemical plants. Not only will they be near cheap power but they will also have certain mineral resources at their disposal. These industries, in turn, will bring increased population and new economic life. The High-

lands have been badly handicapped for many years and for a variety of reasons, one important one being that large sections of the land were held by private owners as hunting and fishing preserves. However, according to Mr. Johnston, the various handicaps are being overcome one by one and with the help of cheap power the Highlands are looking forward to an era of productivity and expansion.

He believes that they have a potential of six thousand million kilowatt-hours in their territory. A number of hydro-electric projects are already under construction and others are in the planning stage and will be started very soon.

"Let's Keep It Simple," Speaker Advises Engineers

**Simplicity, Clear Forceful Style, And Knowledge Of Audience Or
Readers Essential Requirements In Avoiding Technical Tedium
Of Expression—Advertising Executive Addresses Toronto
Chapter A.I.E.E. Members**

How can an engineer express himself in forceful and interesting terms and avoid the pitfall of technical terminology? An effective answer to this question was provided by Jack Heggie, A. R. Poyntz Advertising Limited executive, in addressing the American Institute of Electrical Engineers, Toronto Chapter, recently.

Simplicity

First, simplicity should be the basic keynote. The author should put himself in the reader's place and decide what the latter would like to learn about his subject, the speaker pointed out. Then he should present his ideas clearly and concisely, keeping constantly in mind the central theme and resisting any temptation to wander from the track leading to its most logical development.

"Regardless of the degree of technicality of an article or paper, it will fail completely if it does not attract the reader or hearer's attention," Mr. Heggie declared.

Style

Choice of style depends on the nature of the material to be included and the publication or audience.

"A less formal style may be used to advantage at times," the speaker observed, "while a variety of diction, using short, simple and fluent words, always adds appeal. A satisfactory sentence is one in which the thought is clearly and accurately presented," Mr. Heggie continued.

Know Your Audience

The most important single factor is a full realization of what the audience or readers want to know about the subject and assuring them right at the beginning that the material is going to be of interest to them. "The aspect of the subject most likely to appeal to an audience is that which is new to them and embraces an original or unfamiliar principle," the speaker asserted.

Continuing, he stated that "clear, forceful and varied expression is effective in holding attention. Long and wordy sentences, awkward phrases, needless repetition and obvious hesitation tend to

make the audience sleepy or inattentive."

"It isn't really hard to be colourful and interesting if you follow Elmer Wheeler's renowned advice to sell the 'sizzle' rather than the steak. I could talk for hours in technical language about the scientific superiority of a tire's tread design, but when I tell you that the wavy lines of rubber sweep the road like a windshield until it's so dry you can light a match on it . . . that it enables you to stop on a dime, I'll sell you that tire," Mr. Heggie declared in conclusion.

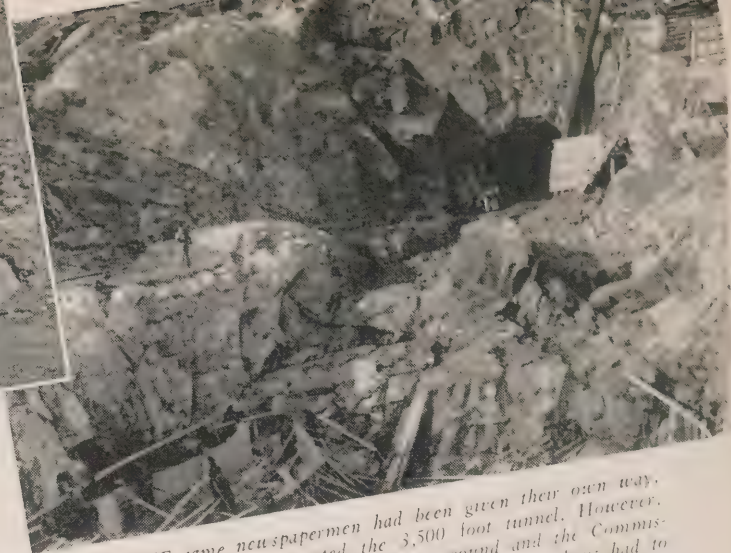
P. B. YATES HONOURED ON RETIREMENT



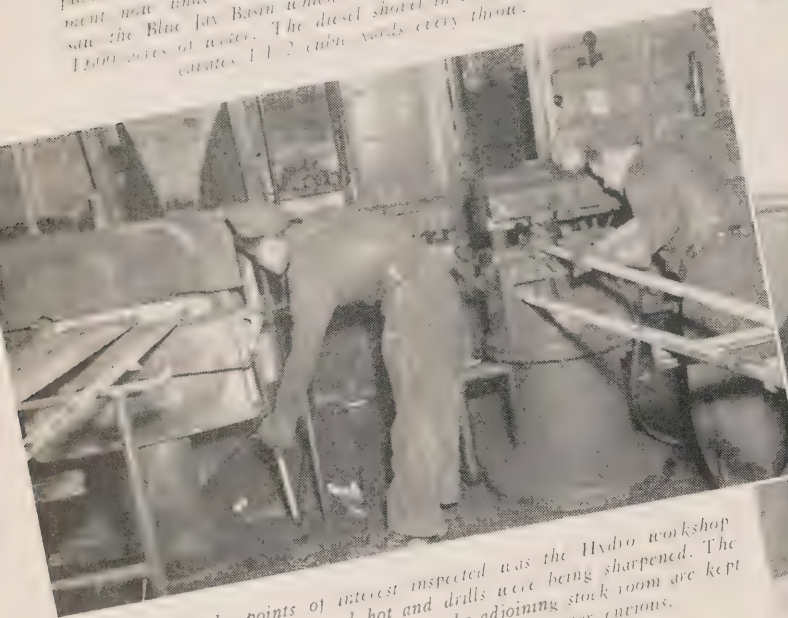
COMMENDATION FOR the outstanding role he played in the development of St. Catharines highlighted a testimonial dinner tendered to Peter B. Yates who recently retired as Manager of the City's Public Utilities Commission. This event marked a culmination of 33 years' faithful service and members and employees of the Commission as well as city officials took the opportunity to pay tribute to Mr. Yates. Added to the laudatory words were concrete expressions of the esteem in which the retiring Manager is held. Pictured above, while reading some of the autographs on the banquet's special menu are, left to right, J. R. Sullivan, Woodstock, A.M.E.U. President; Dr. W. J. Chapman, St. Catharines Commissioner; Mr. Yates and W. B. Elliott, St. Catharines Commission Chairman. Originally employed in the municipal department of the H.E.P.C., Mr. Yates went to St. Catharines in 1914 to supervise installation of the city's public utilities and remained as Manager. During this time he saw gas and arc lights disappear while the city developed into one of the busiest urban centres in Ontario. When Mr. Yates became Commission Manager only a few residents were using electricity. Today nearly 11,000 consumers are served by the St. Catharines' system.



WHEN ABOUT thirty writers representing various Ontario publications were making a tour last fall of the Hydro development now under construction on the Agniasabon river they saw the Blue Jay Basin which will form a head pond storing 1,000 acres of water. The diesel shovel in the foreground excavates 1112 cubic yards every throw.



IF THE same newspapermen had been given their own way, they would have inspected the 3,500 foot tunnel. However, there weren't enough helmets to go around and the Commission's policy regarding safety is very rigid so the boys had to look in from the outside.



ONE OF the points of interest inspected was the Hydro workshop where the forges were red hot and drills were being sharpened. The tip top shape in which the shop and the adjoining stock room are kept would make any garage or factory operator envious.



F. H. LESLIE OF Niagara Falls was demonstrating the size of a fish he had once hauled out of Lake Nipigon. The spectators are A. H. Frampton, the Commission's Director of Engineering, and W. E. Mason, of Sudbury. The picture was taken during a seventh inning stretch.



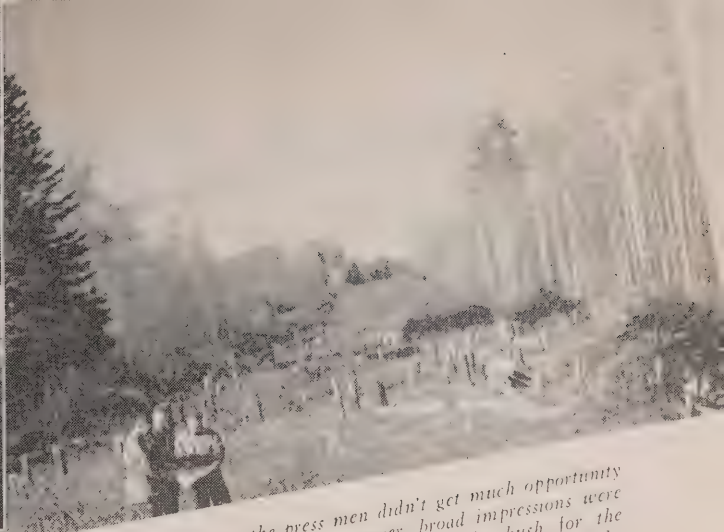
ARRIVING AT Cameron Falls by P.S. Hydro's guests were all in one place for twenty-two seconds not counting dinner time. In this twenty-two seconds the photographer snapped this picture. Some of the prominent literary guests may be recognized.



HERE ARE Roly Robinson, H. J. Johnson and C. L. Hayes, General Superintendent at Agniasabon.



UP AT Alexander Landing Hydro's visitors were really thrilled with the spillway which makes a very dazzling scene as the excess water not used in the plant flows from the forebay to reach the lower level of the river.



AS TIME was short the press men didn't get much opportunity to tour the country on foot. However, broad impressions were gained. Here is a track slashed through the bush for the transmission lines which will carry the power from the Aguasabon plant when it is completed in the fall of this year.

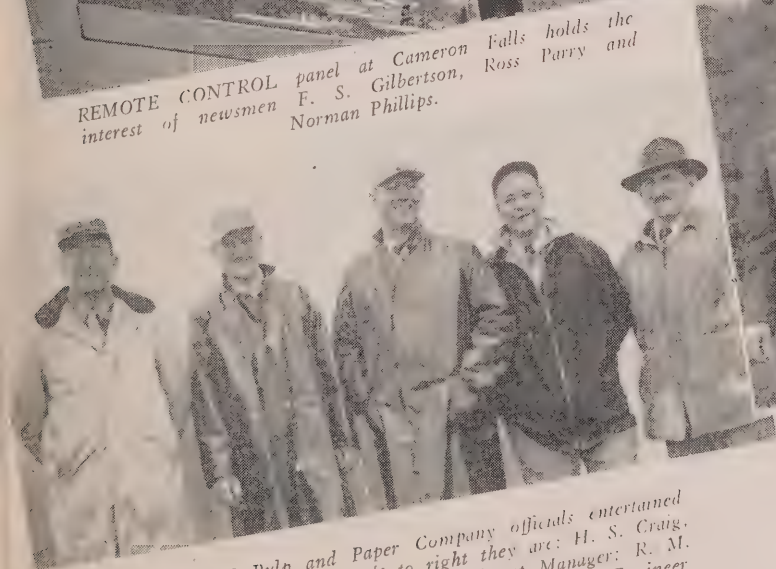
NEWSMEN SEE AGUASABON



REMOTE CONTROL panel at Cameron Falls holds the interest of newsmen F. S. Gilbertson, Ross Parry and Norman Phillips.



ANOTHER GROUP of newsmen examining the panel at Cameron Falls that controls the generators at Alexander Landing.



LONG LAC Pulp and Paper Company officials entertained the press at breakfast. Left to right they are: H. S. Craig, Manager; G. S. "Pat" Patterson, Assistant Manager; R. M. Schneble, Assistant Manager; D. L. Emerson, Engineer and F. O. Soughton.



IN FRONT of the staff house at Cameron Falls are L. Alexander, M. W. Foster, L. W. Looney, H. D. Butler and R. M. Kitchen.

IN THE SPIN

(Continued from page 5)

as a casting wheel carries it into the "chipper." Here it is chopped up into flake which is emptied into a storage hopper. As required, the flake is conveyed by a portable hopper to heating grids where it is melted under pressure into a thick gummy mass.

Hydro's Exacting Role

Hydro's job now becomes of the highest importance as the viscous substance is extruded by the spinnerets. These are perforated metal discs about the size of a silver dollar. Forced through the holes in the spinnerets, the nylon comes out in filaments which harden in the cold air.

The work upon which the spinnerets are engaged is similar to that of a spider spinning its web. And in order that every thread of the web may be continuously of uniform diameter it is essential that the frequency of the 60-cycle current driving the motors should not vary at most more than one-fifth of a cycle.

It works out this way. The frequency affects the speed of the motors. The speed of the motors affects the pumping pressure. The pumping pressure affects the diameter of the threads. And if the threads which are to be woven into yarns are not uniform in diameter, the most direful results are to be expected when the yarns are dyed. For instance, instead of coming out a beautiful taupe, nylon hosiery might be striped like the zebra or spotted like the pard. Naturally, Nylon is not prepared to go as far as this in anticipating women's vagaries with regard to attire—at least not until it hears from the designers in Paris and New York.

Maintaining Frequency

Momentary fluctuations in frequency cannot be avoided by Hydro or any other power producer. Any sudden heavy power demand may cause the frequency to drop before the generating units pick up the load. If, however, the capacity of the generators is not over-taxed, the fluctuation will be immediately corrected.

Normally, in the case of a vast linked-up system like that of The Hydro-Electric Power Commission of Ontario, when one generator unit is over-loaded, another unit comes automatically to its aid. What the Commission is concerned in guarding against is a drop in frequency due to the over-taxing of its entire generating system. When this occurs, it is impossible for the generators to recover their correct frequency "beat" without some relief from their burden. And this relief can only be given by a readjustment of power loads. These readjustments naturally affect production somewhere.

The maintenance of a high rate of production in industry was never so vital as at the present time when material held back by the war is in such great demand. The importance, therefore, of consumers practising economies in the non-essential use of electricity under present conditions of power supply so that industries can be adequately serviced is stressed.

While frequency is most critical at Nylon with respect to the extrusion process, its close regulation is also important in further operations.

After the extruded nylon filaments have been gathered together to form strands of yarn and wound up on bobbins, the material is passed on to a series of rollers for stretching or drawing. Until now the molecules of the substance have been scattered at random, helter-skelter like straws in a haystack. When the yarn is stretched they take on an orderly arrangement. They become parallel to one another and are brought much closer together. And it is this closely-packed parallel formation of the molecules which gives to nylon its strength and elasticity. The machinery by which the stretching is carried out is, of course, driven by electric motors and if the current is off the frequency "beam," the control of the operations may be more difficult.

Customer Groups

The nylon fibre has now become a true textile yarn and from this point it goes through the usual yarn processes of sizing, twisting and oiling. It is then wound on cones or spools and is ready to be shipped to the manufacturers of textiles. In Ontario, Canadian Industries Limited has manufacturing customer groups at Kincardine, Hanover, Guelph, Galt, St. Catharines, Welland, Woodstock, London, Hamilton and Toronto—all of course dependent upon Hydro power and together employing a large number of men and girls in nylon's further fabrication.

The processes which have been described are, of course, carried out in various sections of a vast plant which covers 50 acres or more of ground. Nylon leaves Kingston white in colour—it is dyed after it reaches the hosiery and textile manufacturers—and this is symbolic of the cleanliness and neatness which is everywhere so attractive a feature. The buildings are surrounded by spacious well-kept lawns bordered with flower beds and the co-operation of the employees is reflected in the tidiness of the interiors.

The men employed at the Kingston plant work on three shifts and the girls on two, and the health of employees is safeguarded by periodic check-ups. The first aid station is equipped with many of the electrical installations which are usually found only in hospitals. X-ray

and blood tests are regularly carried out and there is suitable equipment for minor operations.

HYDRO TO BUY POWER FROM POLYMER PLANT

**Ten-Year Contract Becomes Effective
October 1, 1948 — 30,000
Horsepower**

Negotiations have been completed for the purchase of approximately 30,000 horsepower by The Hydro-Electric Power Commission of Ontario from the Polymer Corporation Ltd., Sarnia. The contract has been made for a ten-year period and will come into effect on October 1, 1948.

An announcement to this effect has been made by officials of both Polymer Corporation Ltd. and the Hydro Commission. The Sarnia company generates its own electricity and the plan is to sell the surplus.

Polymer's 60-cycle, steam-generated power will be fed into Hydro's Southern Ontario system through a frequency unit which will be built at Westminster Transformation Station, London.

When this additional power becomes available, it is stated, it will help meet steadily increasing demands, particularly in the Sarnia area where many new industries are being established. A number of these industries require the 60-cycle current and Hydro will be able to supply them with the purchased power before the balance of this power is converted to 25-cycle for the main system.

The contract provides that the power will be used entirely on a peak basis, that is, the maximum amount will be purchased only in the peak load months and other times it will be used in such proportion as is needed by the whole system.

J. F. CRAIG DIES

JOHN FRANKLIN CRAIG, formerly a member of the Barrie Public Utilities Commission, died in hospital on Christmas Day.

Mr. Craig was born at Goderich in 1870 and received his education there. He was later apprenticed to a tailor and eventually went into the men's clothing business.

Keenly interested in municipal affairs, Mr. Craig was a member of the local utilities for eighteen years, acting as mayor for nine years and chairman for four. He was also on the town council for some years as alderman, deputy reeve and reeve. He also served on the Hospital Board; Parks Commission; Board of Health; Library Board and others.

Mr. Craig was well known in Masonic circles and was Master of the Barrie Orange Lodge.

He is survived by five sons and two daughters; his wife having predeceased him in May, 1945.

#his and #hat

By The Editor

THIS IS IT!

The year 1948 has made its official debut. For thousands it was an occasion for the usual merrymaking, blaring noise, bursting balloons, paper hats and all the other adjuncts associated with the New Year's Eve celebrations.

In striking contrast to this tinselled and effervescent welcome to the New Year was the more serious observance. For thousands it was an occasion for solemn meditation and rededication—a time for contemplating the omissions as well as the commissions of the past year—a time for preparing oneself to meet the challenges of the coming year.

Regardless of the manner in which we greeted the New Year, however, there are few, even in the midst of frolic, who, while singing "Auld Lang Syne," could not have had the solemn thought that the year 1948 may bring men and nations to the crossroads of destiny and that the acts and attitude of all men and women, individually and collectively, can be important to the shaping of that destiny.

In meditating upon the present troubled conditions in the world today we remembered an impressive Christmas message in verse which we heard broadcast during the festive season. The import of the message was that Christmas is a time when goodwill, kindness and tolerance abound and that true and lasting peace could become a reality throughout the world if men of all nations could keep Christmas in their hearts all the year round.

We have the privilege of knowing many people who do try to keep Christmas in their hearts at all times. They are setting an example for all men to follow.

AND NOW to deal with a number of enquiries from readers who asked us some time ago if we were planning to observe Hogmanay (New Year's Eve) in the traditional Scottish manner and from

others who were curious to know more about the Hogmanay observance.

To the first group the answer is that we have welcomed the New Year in the way that is our custom.

By that we mean we have been first-footed by a dark man whose instep was not low and who brought us a piece of coal. We have eaten shortbread and have had ginger wine. Now, we are duly fortified to meet the demands of the New Year.

To those who wished to know a little about this Scottish observance, we would point out that it is a time-honoured tradition among Scots to have a first-foot on Hogmanay. In other words, a person who is chosen in advance is the first to cross the threshold of the home after midnight on New Year's Eve. A heavy responsibility rests upon the shoulder of this person for he (it is always a man) determines the luck which will be enjoyed during the coming year by the family whom he first-foots. Therefore, great care is taken in making the selection. The man must be dark. He must not have a low instep. Fair men and those with low insteps are regarded as being unlucky first-foots. The first-foot must bring with him a gift. A piece of coal is regarded as a lucky gift. If a first-foot arrived without a gift, he would be inviting poverty to the home during the coming year and if he were to enter the house unshod he would be inviting death. Upon entering the home, the first-foot enjoys the privilege of kissing all the ladies present—and of shaking hands with the gentlemen! Before leaving the first-foot must break bread and drink wine. In homes where there are fireplaces, the fire should be burning brightly at midnight.

Space will not permit us to go into detail concerning the why and wherefore of this traditional ceremony except to state that the Scottish Hogmanay observance was at one time—centuries ago—a religious feast which had its origin in the Scandinavian countries. To this day, while Scots observe the religious significance of Christmas, the all-out celebra-

tions of the festive season do not take place until Hogmanay.

WE HAVE a further acknowledgment to make to many of our readers who commented upon our story on the Royal Wedding last month. We deeply appreciate the kindly spirit which prompted these readers to say such nice things about our humble effort to express in words the impressions we formed during the broadcast.

IN CLOSING this first page of 1948, we cannot help but think about the tremendous responsibilities facing all members of the great Hydro family throughout Ontario in this momentous year. It is difficult to grasp the full significance of the Commission's all-out construction programme which, over the next few years, will involve an expenditure of \$300,000,000. It seems to us that we can form a truer conception of our responsibility—regardless of the position we may hold—when we remember that millions of people, directly and indirectly, will benefit as a result of the great effort now being made by Hydro to provide more electricity as quickly as possible. While the word "Hydro" is symbolized to thousands of people by Niagara Falls or a great 500-ton generator, Hydro, in the last analysis, is the people who keep it going every minute of every day and every day of every year. The linemen whose ceaseless vigil helps maintain service in the remote areas of Northern Ontario are Hydro, operators, floormen, the managers and staffs of Hydro municipalities, draftsmen, engineers, the General Manager and Chief Engineer, the Commissioners, Superintendents, clerks, stenographers, accountants, maintenance staff, elevator girls, mail carriers, research workers and others—all are Hydro. And one and all have their respective contributions to make to the continuing march of Hydro which is vitally linked with the industrial and economic progress of Ontario.

So let each one play his or her full part in this momentous year of 1948.



Hydro

HOME FORUM

by *Edithemmu Muir*

HOME ECONOMIST

As we cross the threshold of the New Year let us hope that each one of us will firmly resolve to work harmoniously together as a people and as a nation throughout the coming year.

When you have figured out your food budget, consider whether you do or don't "eat" the appropriation wisely. For instance: irregular meals, too large servings, too many snacks, too many garnishes will run away with your food money.

Now that the festive season is over, you may not use ice cubes so frequently. May we therefore suggest that, during the winter period, you stick a piece of heavy cellophane over any open freezing unit and less frost will form on the inside of the unit.

If the festivities leave you with stale cake or cookies, make this quick pudding with them: Crumb a layer of the cake in the bottom of a utility baking dish (not as deep as the usual casserole), spread contents with a boiled custard, then top with remaining crumbs and bake briefly. Serve with hot fruit juice.

Thick marmalade diluted with water (or still better, with orange juice), and made very hot in the double boiler, will provide a delicious sauce for ice cream or a plain pudding at a moment's notice.

If you are baking any version of an oatmeal or other plain cookie, roll some of the dough thin, shape with a cutter, and put rounds together in pairs, with a spoonful of mincemeat as filling then bake according to the needs of the dough.

Cook a hot breakfast cereal in milk sometimes—it steps up appreciably the food value and adds to the flavour.

I have always liked to see a cake served in its entirety and cut as

SKI PARTY DISH

- 2 Cups Cooked Meat
- 2 Cups Meat Stock
- 1 Cup Canned Tomatoes
- Salt and Pepper
- ½ Cup Rice
- 2 Tablespoons Butter
- 1 Tablespoon Worcestershire Sauce
- 2 Medium-sized Onions

Cook the meat, which has been cut in cubes, stock, tomatoes, one of the onions cut fine, Worcestershire sauce and seasonings together for about 10 minutes. Melt the butter in a frying pan and add the onion and uncooked rice. Allow both to brown slightly and add them to the other mixture. Turn all into a casserole and bake 30 minutes in electric oven at 375 degrees. Bake scones at same time and serve with baked casserole.

needed. Fruit cake looks especially attractive this way, and there is likely to be an actual saving of cake because no more will be cut than eaten.

Cold Platter: Bring out your party entrée dish and arrange the weekend left-overs attractively. You may have a little sandwich spread, a little cold meat, a little potato salad made from cold mashed potatoes, the minced garnishes and the left-over vegetables. If you haven't enough, prepare a few devilled eggs.

Check your baking methods again for ways to conserve electricity. Bake tarts instead of pies; bake drop cakes instead of square ones; bake tea biscuits instead of muffins—and so on.

Pumpkin custard is economical so you may afford a deluxe topping. Try mint flavoured marshmallow.

An economical dish? Yes, a bean loaf with lots of tomato sauce. However these vegetables need one particular spice—basil. Now you can prepare the dish.

Out of the pressure cooker comes an old bird made so tender the meat falls off the bones. Allow forty minutes to be assured of what we say.

When you lift the pieces of chicken out of the pressure cooker add whole potatoes and onions and cook in the chicken gravy. Meanwhile keep the meat on the platter in the warming oven with the plates.

It may surprise you, but the word "menu" means slender—yes, slender. It is a come-on and a warning all in one. Better watch it.

Folks who like kidneys, like kidneys. One of the best ways to introduce others to eat them is soak, slice and place in greased pan with bacon. Sauté until cooked—about 12 minutes.

Ever eat a cider sherbet? Make it like any other sherbet only use cider instead of fruit juices. Or you can use thick apple-sauce and canned apple juice.

Food speeds up the circulation of the blood—the rate at which heat is produced by the body—the rate, too, at which the body makes use of the foods which repair and build the tissues and renew all parts of the body. You have probably heard about metabolism—it's the scientific word for the same function.

Baked beans, pressure cooked, and to which you add slices of weiners or pieces of pre-cooked sausage, are economical supper dishes.

Cereal foods are excellent heat-producers. Grain products, sugar, sweets and fatty meats are good sources of supply for "winterizing" the body.

Time savers are again available in the form of cup hooks. If you have plenty of hooks to hold the beater, can opener, stirring spoon and other things you need on the wall at your work table, it will save time.

Lighter Lines



"Go see what Junior is doing and tell him he mustn't."

An Irishman once was mounted on a mule which was kicking all four legs very freely. It finally managed to get a hoof caught in a stirrup, whereupon the Irishman shouted excitedly—"Well, begorra, if you're goin' to get on, I'll have to get off!"

We think of January as being the inevitable beginning of the yearly cycle. Actually, this month was chosen by the Romans with no regard whatever to the position of the sun and is really less suitable as the beginning of the year than the new year's celebrated by, for example, the ancient Egyptians or the ancient Greeks. The former chose September 21st, the date of the autumn equinox and the latter celebrated June 21st as new year's. About the year 672 BC the Romans decided on January as the first month of their modern calendar and named it after their god Janus who, with his two faces looking both forward and backward, was considered suitable as the patron of the new year. In honour of his festival the Romans offered sacrifices, exchanged friendly greetings and gave each other gifts. Some of these customs were still carried on when January 1st was later taken over by the Christian church and made into one of the religious festivals of the Christian calendar.

"Wassail, Wassail, all over the town
Our toast it is white and our ale it is brown,
Our bowl it is made of the good maple tree,
In this wassailing bowl we'll drink unto thee!"

So sang our forefathers (or at least that particular group of them who were not born with the silver spoon) as they trudged through the snow on New Year's Eve, knocking on the doors of the wealthy to beg for "a little something" to fill the ribbon-trimmed wooden wassailing bowl which they had the foresight to bring along. In the meantime the "gentlemen" and lords of the manors sat in their halls beside their own wassail bowls which were brimming with good, spiced, hot ale, comically known as "lamb's wool." As midnight approached, the head of the house ceremoniously drank the health of his family and then passed the cup around the family circle for each to have a sip, and so wish each other a happy new year. The name itself, "wassail," comes from the Anglo Saxon toast of "your health" or Wass hael. A standard recipe for the contents of the bowl was, warm ale, nutmeg, sugar, toast and roasted crabs or apples.

This custom survived in Scotland until quite recently. There, very often after the toast had been drunk, the company danced about the table and sang:

"Weel may we a' be,
Ill may we never see,
Here's to the king,
And the gude company . . ."

"Now be a good little boy," said daddy, as he was leaving the house for work.
"And don't do what?" asked little Edward.

And why should Swiss cheese have all those holes when it's really limburger that needs the ventilation?

A government expert asked an over-worked farmer what time he got up to go to work.

"Son," said the old fellow, "I don't go to work, I wake up surrounded by it."

Another Scottish New Year's Eve tradition was that of "first footing." The first person to cross the threshold of a house after midnight brought either good or bad luck for the whole year. To make the luck good, "first foot" was supposed to bring a small gift, wine or some sweets. A red herring or a piece of coal are regarded as "lucky gifts." Those who went from door to door on Hogmanay or New Year's Eve in Scotland long ago sang this ancient song:

"I wish you a merry Christmas
And a happy New Year
A pocketful of money
And a cellar full of beer,
And a good fat pig
To serve you all the year.
Ladies and gentlemen
Sitting by the fire,
Pity us poor boys
Out in the mire . . ."

The traditional fool and his money are lucky ever to have got together in the first place!—Punch.

The dimmer the living room light, the greater the scandal power.



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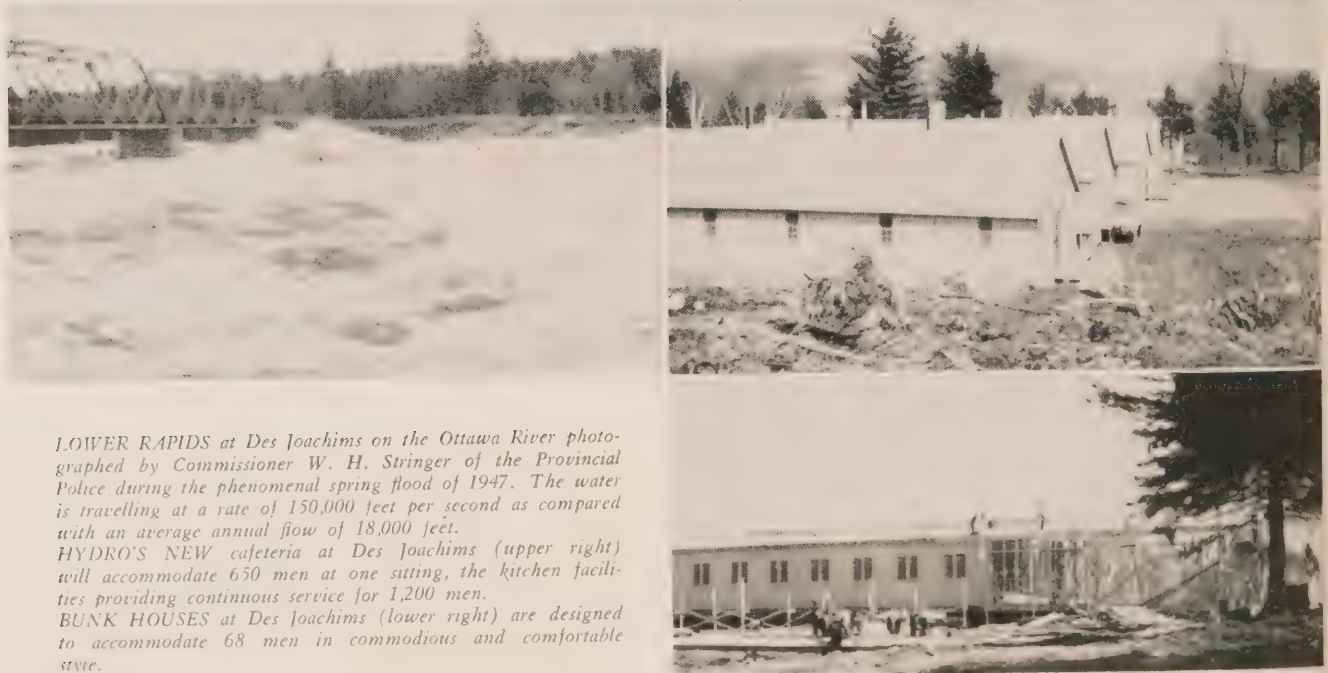
"Foot of the class, head of the class, what's the difference? They teach the same thing at both ends"

HONOURED BY COLLEAGUES



APPOINTMENT AS Regional Manager of Hydro's Eastern Region which will have Ottawa as its headquarters, was recognized by a large group of his Hydro colleagues recently when they tendered O. S. Luney, (above left), a complimentary dinner followed by a presentation of a travelling bag and brief case. Mr. Luney also enjoyed the reunion with his Hydro friends, including A. S. Robertson; R. L. Hearn, General Manager and Chief Engineer; H. Duncan and A. W. Manby, Assistant General Manager, Administration.

PHOTOGRAPHS OF DES JOACHIMS TAKEN BY COMMISSIONER STRINGER



LOWER RAPIDS at Des Joachims on the Ottawa River photographed by Commissioner W. H. Stringer of the Provincial Police during the phenomenal spring flood of 1947. The water is travelling at a rate of 150,000 feet per second as compared with an average annual flow of 18,000 feet.
HYDRO'S NEW cafeteria at Des Joachims (upper right) will accommodate 650 men at one sitting, the kitchen facilities providing continuous service for 1,200 men.
BUNK HOUSES at Des Joachims (lower right) are designed to accommodate 68 men in commodious and comfortable style.

HYDRO AT WORK

ELECTRICITY WASHES DISHES



Ask any woman and she'll tell you that dishwashing is one of the most time-wasting and thankless jobs around the kitchen. And if it's a headache for the individual housewife, it is just as much and even more for the restaurants who feed not one family but hundreds. However, electricity and engineering have combined to solve the problem.

Many Improvements

Pictured above is one of the standard electric dishwashers used in restaurant and other large kitchens. With a two-horsepower motor attached, a revolving belt and two big cleansing tanks, it is designed to take care of anything up to 1,500 diners at each meal. The original of this particular machine appeared away back in 1879 and has been manufactured in Canada since 1906. The principle remains the same but many improvements have been made and are being made all the time.

Dishes Arranged In Baskets

The dishes are arranged in baskets and are then sent on conveyor belts through two tanks, the first for washing and the second for rinsing and sterilizing. The first tank contains hot water and a washing compound, the temperature is controlled at 135 degrees which is hot enough to dissolve grease but not hot enough to bake the food to the plates. The second tank has steam for the purpose of thoroughly sterilizing what goes through and the temperature is kept between 185 and 190 degrees.

The dishes emerge from the second tank, clean and shining and all that needs to be done is to sort them and replace them on their racks.

Incidentally, these same dishwashers are being used in most of the kitchens in Hydro's big construction camps, where as many as 1,200 men sit down to three meals a day.



HYDRO NEWS INDEX

1947

A

ISSUE

Acton (Acton P.U.C.)	July-August
Airing Farm Topics From Coast To Coast (National Farm Radio Forum)	October
"All For One; One For All" Spirit Stressed In Meeting Power Problems (District No. 1 O.M.E.A. Convention At Kingston)	November

B

Biggest Construction Programme Now In Progress Says Challies (H.E.P.C. Construction Department's Annual Dinner)	May
Brantford (Brantford P.U.C.)	May
Brantford Really On Map With Modernized Office (Brantford R.O.A.)	January

C

City Lights (Toronto H.E.S.)	July-August
Collingwood (Collingwood P.U.C.)	February
Come Into The Garden	July-August
Commission Appoints Rothwell And Harmer To Important Posts	September
Commission Organization Is Streamlined To Meet Greatest Expansion In History (New Organization Chart)	May
Commission Setting "All Out" Pace In Biggest Programme In History (Six Power Projects Under Construction)	September
Conference Vox Pop (O.M.E.A. - A.M.E.U. Convention)	April
Conference Vox Pop (O.M.E.A. - A.M.E.U. Convention)	April
Correction Of Blight In Residential Areas Discussed By Speaker (Gordon Culham At A.M.E.U. Conference)	April
Cy Says Snappy Suit Helps Sales Soar (C. T. Burg Addresses O.M.E.A. - A.M.E.U. Convention)	April

D

Democracy Is Subject Of Stirring Address At Conference Dinner (Hon. Orlo M. Brees Addresses O.M.E.A. - A.M.E.U. Convention)	April
Desks Stretch Legs, Synthetic Bands Sink At A.M.E.U. Meeting (London)	November
Des Joachims (Pictures only)	July-August
Districts 7 And 8 O.M.E.A. (Windsor)	November
Dr. Hogg Retires As Chairman To Act In Consulting Capacity	March
Dr. R. W. I. Urquhart — Why Group Surveys For Tuberculosis	January
Dr. R. W. I. Urquhart—The Common Cold	February
Dr. R. W. I. Urquhart—On Growing Older	March
Dr. R. W. I. Urquhart—April Showers	April
Dr. R. W. I. Urquhart—Poison Ivy	May
Dr. R. W. I. Urquhart—Insect Pests	June
Dr. R. W. I. Urquhart—Holiday Hazards	July-August
Dr. R. W. I. Urquhart—Poliomyelitis	September
Dr. R. W. I. Urquhart—Allergy	October
Dr. R. W. I. Urquhart—Sinusitis	November
Dr. R. W. I. Urquhart—First Aid	December

E

Electrical Problems In Britain Compared With Those In Ontario (Harold Hobson Addresses District No. 1 O.M.E.A. Convention At Kingston)	November
Electricity In Medicine—Chapter I	March
Electricity In Medicine—Chapter II	May

F

Feeding A Multitude (Construction Camp Cafeterias)	March
--	-------

G

Generator Heavier Than Locomotive: Two Cranes Required (Major Overhaul At Queenston-Chippawa)	July-August
Get Back Into Normal Swim Following Devastating Floods (Storm In Southwestern Ontario)	May
Going With The Grain (Grain Elevators)	March

H

Hot Under The Soil (Electric Soil Heating)	September
Hydro And Steel (Steel Company of Canada, Hamilton)	December
Hydro At The C.N.E. (Pictures only)	October
Hydro At Work—Traffic Lights	January
Hydro At Work—Electric Eye—The Automatic Assistant	March
Hydro At Work—Escalators—The Step Saver	April
Hydro At Work—Keeping Food Fresh	May
Hydro At Work—Helping The Dentist	June
Hydro At Work—Electric Trolley Bus	July-August
Hydro At Work—Knitting Machine	September
Hydro At Work—Lights At C.N.E.	October
Hydro At Work—Incubator Baby	November
Hydro At Work—Light In The Role Of Policeman	December
Hydro Helps Santa Make Lots Of Toys For Girls And Boys (Toronto Toy Factory)	December
Hydro On Celluloid (Hydro films)	January
Hydro On The Farm—Grain Grinding	January
Hydro Paces Progress As Trenton Marches On (Trenton P.U.C.)	January
Hydro Plays Leading Role In Aluminum Production (Aluminum Company of Canada)	November
Hydro Power Is Driving Force In March To Greater Destiny (Conservation)	December

Hydro Power Paces Atlas (Atlas Steel Company)	October
Hydro's Magic Mirror (Power Supervision)	March
Hydro's Ruling Queen (Port Dover H.S. Visit to Queenston-Chippawa)	September
Hydro's Skilled Foresters Guardians Of 250,000 Trees	July-August

I

In Planning System Have Eye To Future Municipalities Told (Problems Of Smaller Municipalities Discussed At A.M.E.U. Session)	April
--	-------

J

J. H. Mackay Passes From Life's Picture	April
---	-------

L

London's Renovated Showroom Keynotes Progressive Spirit (London P.U.C.)	January
---	---------

M

Many Men Win Their Spurs At Hydro Linemen's School	September
Michener Stresses Change In Canada (Hon. D. R. Michener addresses District No. 3 O.M.E.A. at Fort William)	October
Mid Hydro Sorceries And Dragon's Blood (Photo-engraving)	June
Midland (Midland P.U.C.)	September
Modern Belt Used By Linemen Chalks Up Fine Safety Record	February

N

Napanee (Napanee P.U.C.)	March
Newsman Get First-Hand Impressions Of Commission's All-Out Programme	July-August

O

O.M.E.A. Seeks Additional Data On Proposed Frequency Changeover (O.M.E.A.-A.M.E.U. Convention)	April
Over 200 Hydro Men Register For Adequate Wiring Schools (Electric Service League of Ontario)	March

P

Picton (Picton P.U.C.)	December
Plans in Plaster of Paris (Three-dimensional maps in casts)	October
Power and Plywood	June
Power Deficiency Problem Not Peculiar To Canada Declares Harold Hobson (District No. 5 O.M.E.A. Convention at Niagara Falls)	November
Power Demands Exceed Supply Strike Tells District No. 6 (O.M.E.A. Convention at Stratford)	November
Present Problems Facing Hydro Outlined By O.M.E.A. President (O.M.E.A.-A.M.E.U. Convention)	April
"Pros" And "Cons" Of Changeover Subject Of Debate At Conference (O.M.E.A.-A.M.E.U. Convention)	April
Pupils Show Marked Enterprise In Designing Hydro Projects (Strathcona School, Hamilton)	May

Q

Questionnaire Period Interesting Feature At Kingston Meeting (District No. 1 O.M.E.A. Convention)	November
---	----------

R

Reports Presented At A.M.E.U. Session	April
---	-------

S

Same Loyalty, Courage, Hard Work Required In Future As In Past (H.E.P.C. Quarter Century Banquet)	November
Says Eternal Vigilance Price Of Good Service (A. E. Fort Addresses A.M.E.U. Conference)	April
Says More Electricity Needed To Meet Period Of Expansion (Address by Premier George A. Drew at O.M.E.A.-A.M.E.U. Convention)	April
Says Safety Practices In Utility Industry Have Splendid Results (Erle S. Miner Addresses A.M.E.U. Conference)	April
"Scurried Around On A Bicycle" Making Calls, Promoting Hydro (W. R. Plewman Addresses District No. 6 O.M.E.A. at Stratford)	November
Second DeCew Unit Now In Service	November
Sees Hydro On Threshold Of New Era Of Development (Address by W. Ross Strike, KC, at O.M.E.A.-A.M.E.U. Convention)	April
St. Thomas The Railway City (St. Thomas P.U.C.)	June
Stewartville (Pictures only)	June
Storm (In area around Niagara Peninsula north of Lake Erie; Chatham to Windsor)	January
Stress World-Wide Trend Towards Standardization (District No. 6 O.M.E.A.)	February

T

Today's Milk	April
Toronto Adequate Wiring School	June
Tree Surgery	September
Tremendous Programme Facing Commission (A. H. Frampton Addresses Construction Men)	May

U

Unprecedented Demands For Power Barometer Of Ontario's Progress (Districts Nos. 2 and 3, O.M.E.A. Conventions)	October
Urges Regular Investigation Of Hydrological Conditions (Flow Conditions)	January
U.S. Committee Impressed By St. Lawrence Resources (Hon. G. H. Challies Addresses District No. 1 O.M.E.A. Gathering At Kingston)	November

W

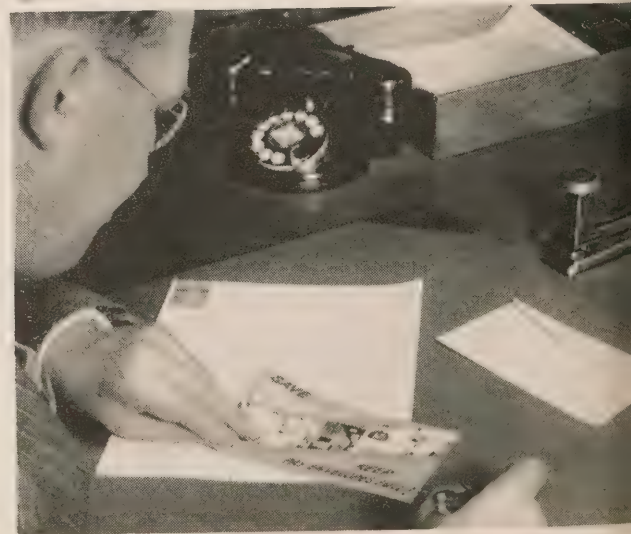
Wanton Destruction Of Street Lights Costly And Serious To Ontario People	June
Water Heater Radio Supervisory Controls Discussed By A.M.E.U. (F. F. Ambuhl)	April

EVERYONE URGED TO SAVE POWER AND HELP MAINTAIN EMPLOYMENT



ANOTHER TYPICAL example of the many places of business that are willingly co-operating in the power conservation programme is this small bake shop, (above).

THIS DOWN-TOWN movie theatre prominently displays the Hydro conservation card in the box office (below), proclaims the fact that they are doing their part by reducing their own use of electricity.



HYDRO PAMPHLETS (left) make absorbing reading for this pair. It tells them the many ways of saving power around the house. In the meantime, father at his office, (right) is being reminded of the same thing by his conservation blotter and envelope sticker.



HYDRO

News

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WELCOME

On March 1, 2 and 3 Toronto will again enjoy the privilege of playing host to over one thousand delegates who will converge upon the city from all parts of the Province to take part in the annual conventions of the Association of Municipal Electrical Utilities and of the Ontario Municipal Electric Association.

The deliberations of these groups are of more than passing significance. Over the years, planning and co-operation on the part of public-spirited men who have been, and are identified with these Associations, have contributed much to the progress of Hydro in Ontario. During the war years that co-operation was linked with the role which Hydro was able to play in helping produce more than half of the war materials and equipment turned out by the entire Dominion of Canada.

Today, when the Commission faces the greatest expansion period in its history, that same co-operation is in evidence and is most important.

These annual conventions are of great value for the opportunity they offer for a democratic exchange of views. They are also important because they enable far-flung members of the great Hydro family to come together and renew those happy personal contacts which mean so much to the continuing progress of Hydro throughout Ontario.

Advance reports indicate that there will be a record registration of delegates for this year's conventions. This evidence of continued interest in the work of these associations can be accepted as cause for gratification. Today Hydro stands on the threshold of a new era of expansion. That expansion, which will bring increased responsibilities, will call forth the best from all men and women who are privileged to make a contribution to the progress of an organization which, already, is outstanding in its field.

It goes without saying that all delegates—both A.M.E.U. and O.M.E.A.—are assured of the warmest welcome as they come to Toronto to take part in this year's sessions.

The programmes bear testimony to the months of planning and preparation on the part of those who are responsible for making the necessary arrangements. A preview of these programmes indicates that another fine job has been done.



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THE FRONT COVER



THIS MONTH'S cover photo-
graph portrays an immense
stack of pulpwood assembled in
the yards of one of the big South-
ern Ontario paper mills. The stack
is nearly 150 feet high and is
valued at half a million dollars.
Most of the logs will go into the
making of book paper and station-
ery. The conveyor system at the
right, which carries the logs from
the barking plant to the stack, is
operated by Hydro power as are
machines in the mills.

Volume 35

February, 1948

Number 2

CONTENTS

	Page
Pedal Power - - - - -	2
Page Three - - - - -	3
Hydro In The Paper Mill - - - - -	4
District No. 4 O.M.E.A. - - - - -	8
Hydro Serves As Aid To Tailor - - - - -	10
District No. 8 O.M.E.A. - - - - -	12
New Members Of Quarter Century Club - - - - -	14
Hospital at Des Joachims - - - - -	15
District No. 5 O.M.E.A. - - - - -	16
Hydro Home Forum - - - - -	18
Association Of Professional Engineers - - - - -	19
Dr. R. W. I. Urquhart's page - - - - -	20
Stormy Weather - - - - -	21
This And That - - - - -	22
Electric Service League Executive - - - - -	23
Coming A.M.E.U.-O.M.E.A. Conventions - - - - -	24
Power Cuts In Britain - - - - -	27
Lighter Lines - - - - -	28
Hydro At Work - - - - -	29
Monthly Load Summary - - - - -	29





HERE'S AN illustration showing how pedal power is being used to provide horsepower in Britain where power cuts have resulted in industries having to resort to many devices to generate electricity in order to maintain production. This photograph was taken on the premises of a precision instrument manufacturer in London.

PRESENT PROBLEMS

It is a typically human trait to take for granted these services, inventions and privileges which, only a few short years ago, were regarded in a spirit akin to awe and reverence.

Today people would turn round and stare, and likely laugh, if they were to see a horse-drawn cab clop up to their door instead of a sleek, streamlined taxi. Not so long ago the early horseless carriages caused consternation and alarm when they first appeared on the roads.

Likewise, the folk who had been using oil lamps and candles for illumination, stared in open-mouthed wonderment when at the turn of a switch the magic of electricity illuminated a room.

Today electricity, like the automobile, has become part of the modern pattern of living. It is something which is taken for granted and if, on occasion, a turn of the switch should fail to produce light it is not a spirit of awe and wonderment that finds expression but, in many cases, a spirit of impatience. Twenty-four hours a day and 365 days a year—366 days this year!—that switch must never fail to produce light or the energy with which to operate the hundreds of machines and appliances in homes, farms, factories and offices.

Because Hydro is so intimately associated with the lives of the people of Ontario, it is understandable that they find it difficult to appreciate why there should be even a temporary need for conserving power. They have become accustomed to using Hydro freely for hundreds of chores—and under normal conditions that is as it should be. At the present time, however, Hydro is faced with a situation which is very unusual in the matter of power supply. It is not easy to explain all the facts in such a way as to make them fully understandable to the layman who has come to regard Niagara Falls as being symbolic of an unlimited power supply for all the people of the Province.

Only five of the Commission's 53 generating plants are in the Niagara area and these five developments provide less than 1/3 of the power now generated and purchased by the Commission. Many of the Commission's plants

are dependent upon adequate supplies of water which has to be stored and, in this connection, sub-normal rainfall last fall has made it necessary to draw upon these storages to such an extent that there is insufficient water to operate certain plants to their full generating capacity. This is a problem which has not been peculiar to Hydro alone for many power plants outside Ontario have been similarly affected.

Consistent with this shrinkage in generating capacity the demands for power are substantially the same as in December. Therefore, the need for the greatest possible saving every hour of every day and night becomes more imperative because, without this water storage problem, the Commission is still faced with growing demands for power. New industries, expanding industries, more farmers, new home owners and others all need power.

The Commission is dealing with these problems in the most effective way possible. It is now generally known that Hydro's tremendous \$300,000,000 post-war construction programme includes the building of power plants at strategic sites in various parts of the Province. The first of these projects is already in service—the 70,000 horsepower addition to the DeCew plant—and eight other plants are under construction or about to be constructed. Progressively over the next few years something like 1,000,000 horsepower will be added to the Commission's resources.

In meeting the temporary deficiency of power, and pending completion of the new plants, the Commission is making a special appeal to all classes of consumers to make every effort to save electricity in order that Ontario's phenomenal industrial and economic expansion may not be materially affected.

If all consumers face the present problem in a spirit of "one for all and all for one" there should be no hardship upon anybody.

This is a time when electricity should not be taken for granted. And the people of Ontario should play their full part by saving electricity in every way they can so that there will be sufficient electricity available for all essential purposes.



HYDRO

in the

PAPER MILL



Good paper is nice to look at—nice to handle. It makes “readin’, writin’ and ’rithmetic” so much easier. This article shows how Hydro plays an important part in its production.

By Harry M. Blake,
Hydro News

For thirty years the manufacture of pulp and paper has ranked as one of the most important of Canadian industries. Today this country's production of finished paper meets practically all domestic requirements, while the export of pulp and newsprint is a chief factor in the maintenance of the balance of trade.

Hydro power is a mainstay of the pulp and paper industry. In Southern Ontario, The Hydro-Electric Power Commission or the Hydro municipalities supply all the pulp and paper mills with electricity. In the Thunder Bay district, with a single exception, this is also the case. In Northeastern Ontario, where the Commission is virtually a newcomer, the mills generate their own power; but even from the companies established in this section Hydro is continually receiving requests for supplementary loads, and with further expansion in prospect, there is no doubt that the Commission will be called upon to play an increasingly important role.

Paper was made in Ontario as far back as 1827. The pioneer mills were all “rag” mills. Not until well on in the century were the processes developed which made it possible to utilize wood pulp in the manufacture of paper. Electricity has tremendously speeded up these processes and at the same time enlarged the scope and broadened the range of production.

On The March

In 1946 the output of pulp and paper in Ontario alone, according to Government statistics, reached an all-time record of 3,417,512 tons, with a total value of \$207,978,807. Production figures for 1947 are not yet available, but if the increase in power loads supplied directly by the Commission since the war is any criterion, they will be eclipsed before they are recorded by new levels of achievement in 1948. In 1945, the total peak load supplied to Ontario mills was in the neighbourhood of 127,000 horse-

power. By the end of 1947 it had risen to approximately 150,000 horsepower.

As pulp and paper is a comparatively steadily expanding industry, it is customary for mills to anticipate their power needs for as many as five years in advance, and we find that their estimate of the peak loads which they will require the Commission to furnish them in 1952 is in excess of 207,000 horsepower. This is an increase of 38 percent over present loads. It does not take into consideration the additional loads that municipal commissions may be asked to supply. And, of course, the estimate is only from existing mills. It gives no picture of the demand for power that may be made by new enterprises.

Hydro Aiding Industry

With a view to the future requirements of this vital and expanding pulp and paper industry, the Commission is undertaking waterpower developments of considerable magnitude in Northern Ontario. The southern mills will, of course, share in the new power to be provided by the major developments now being carried out on the Ottawa river and at other locations.

Representative Mills Visited

Among the leading enterprises engaged in processing pulp and in the manufacture of all kinds of paper, except newsprint and heavy building “board”, is the Howard Smith Paper Mills Limited. This concern operates both in Ontario and Quebec. Its Ontario mills are located at Cornwall and Merritton. Invitations to visit these establishments were accorded Hydro News.

Last year, the Cornwall mill had an average daily production of 160 tons of sulphite pulp, 115 tons of soda pulp—bleached in both cases—and 140 tons of finished paper. For machine processes alone peak power loads approximating 15,500 horsepower were supplied by the Commission—an increase of nearly 2,000 horsepower over the requirements of 1945. Co-operating with the Commis-

sion in the power conservation plan, the Company is endeavouring to keep loads down to the minimum required for essential purposes. Nevertheless, an additional 500 horsepower will be required to meet expansion of production in 1948, and by 1951 it is expected that peak loads of 20,000 horsepower will be called for.

It was explained to Hydro News by H. E. Mason, the manager at Cornwall, that his mill was principally engaged in the manufacture of the medium quality paper that goes into books, magazines and stationery. Cover paper, food container stock and patented coated boards were also turned out. Pulp was made by both the sulphite and soda processes. About 50 percent of the pulp was used on the premises. The remainder was sold. There were also several interesting by-products, Mr. Mason added, manufactured at the mill.

Motor Installation Trebled

Accompanied by Fred Winterburn, Electrical Superintendent and Foreman A. W. Primeau, Hydro News was privileged to make a tour of the premises.

Hydro power comes in from the Commission's Maple Grove station at 44,000 volts. The 20,000 kva. transformer equipment at the Company's own substation steps it down for distribution in the mill at 550 volts. Altogether, at the end of 1947 there was an installation of 1232 electric motors as compared with 437 in 1937—evidence of the tremendous expansion in the past ten years.

“Barking” Operations

When the pulpwood logs arrive from the forest, the first operation is to strip them of their bark. The logs are brought by a jack-ladder to the barking sheds and passed through two barker drums, each driven by a 100-horsepower motor. The logs are revolved in the drums under pressure of thousands of gallons of swirling water supplied through pumps driven by electric motors. The rubbing action of the tumbling

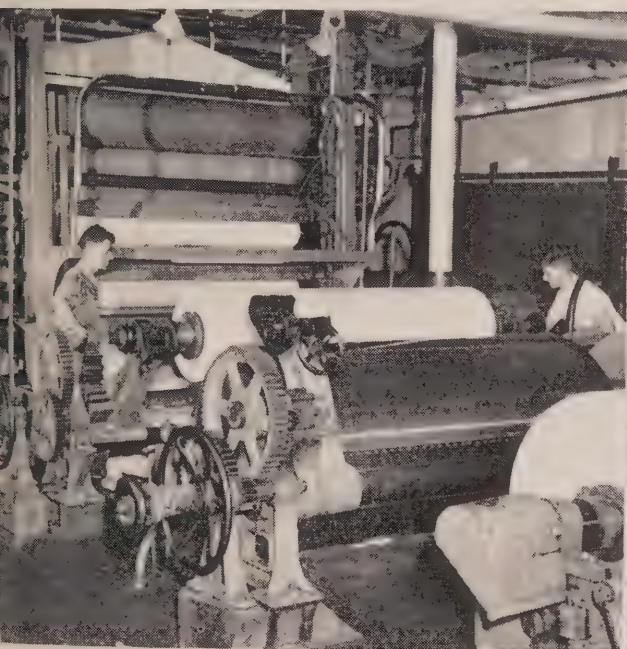
(Continued on page 6)



CROSSING IN front of the officers of the Howard Smith Paper Mills Limited at Cornwall are the lines which distribute to this vital industry the essential Hydro power.



PULPWOOD RECEIVED by the company is first sent to the "barking" plant. In the drums, the rubbing action of the tumbling logs loosens the bark which is then removed by the swirling water. The stripped logs pass along an open flume to the jack ladder and thence by conveyor to the storage stacks.



THE PAPER machine shown here can turn out 700 feet of 12-foot wide book paper a minute. It has a 300-horsepower motor drive and many auxiliary motors are employed. The total electrical equipment of this one machine represents 1,200 horsepower.

A mammoth vat called a "water" dry bleached pulp is mixed with water containing coloring and colouring agents. Mats of dry pulp are fed in and the proper mash is obtained. Surplus water is sucked off by a vacuum pump and the pulp is ready for the paper machines.



HYDRO IN PAPER MILL

(Continued from page 4)

logs loosens the bark which is then removed by the water. The stripped logs pass into an uncovered flume, any logs which may not have received a clean shave being yanked out by watchful attendants and sent back for further "barbering".

A Fortune In Pulpwood

Leaving the barking plant, we were conducted to the location where the stripped pulpwood is stacked. A veritable mountain of logs, 150 feet high and continually augmented from an overhead conveyor sent our photographer, Burt Helling, scurrying in search of a position for a good "shot". Approaching more cautiously with Mr. Winterburn, the writer learned that this giant pile of stripped spruce, together with a somewhat smaller stack of poplar nearby, was valued at \$500,000. It was explained that a 150-horsepower electric motor was used on the main conveyor bringing the logs to the stacks, a 75-horsepower motor in the stacking operations, and a 25-horsepower motor for moving the logs as required from the stacks to the mill.

Pulp-Making Processes

Pulpwood contains about 50 percent of the cellulose fibre required for paper making. Mechanical grinding processes can be employed to reduce the fibres to a usable form. Ground wood, as it is called, still retains, however, a percentage of lignin, tar, resins and sugar. While the pulp made from it is satisfactory for newsprint, it is not so well adapted for the better quality papers. There is also the disadvantage that when colouring is applied to groundwood pulp stock it is apt to fade due to oxidation.

For sulphite pulp employed for the production of better quality paper, the wood, instead of being ground, is cut into chips. These are placed in a large tank known as a "digester"—in a solution of calcium bisulphite. Steam and pressure are applied and the unwanted binding material is dissolved. When the process is complete, the entire contents of the digester are blown into another receptacle where the liquor containing the dissolved lignin is separated from the cellulose fibre. The fibre is cleaned, and, mixed with large quantities of water, is put through screens. The unbleached chemical pulp thus produced is now bleached and washed. It is then placed in a beater where it is mixed with China clay, and a resin or starch sizing agent, and treated to develop the strength of the fibres. Here also such colouring as may be desired is added before it is passed on to the paper machines.

Electric Boiler

At Cornwall an electric boiler is used during those times when sufficient power is available for the generation and processing of wet steam for the digester. This boiler is shaped like a big kettle and is fitted with three electrodes. It has a maximum capacity of 20,000 kva.

Caustic soda is produced electrolytically from salt at the Cornwall mill. It is used in making soda pulp from poplar. Soda pulp gives softness and opaqueness to paper, but its fibres are too short to impart much strength; however a poplar pulp can be blended with a strong spruce sulphite pulp to produce both a good-looking and serviceable book paper, envelope or magazine paper.

Electrically Driven Machines

Four paper making machines are installed at the Cornwall mill. One of these machines, with a 300-horsepower drive and auxiliary motor equipment—totalling 1,200 horsepower—can turn out 700 feet of 12-foot wide paper a minute.

From these machines the paper passes on to the "cutters," where it is cut to the desired length and width and trimmed. There are eight cutting units, each equipped with a 15-horsepower motor. There is also a super calender machine, with a 75-horsepower drive, for putting a finish on special paper. Since the war the production of the paper machines has been increased from 20 to 25 percent and the Company is now engaged in improving and enlarging its facilities. As tremendous quantities of water are required for the pulp processing, a new pump house is being built, and this will be followed by an extension of the filter plant.

Ten percent of the paper manufactured in the Cornwall mill is exported. The chief customers are Australia and New Zealand, but markets have also been established in South Africa, India, South and Central America, the West Indies, Mexico, China and even in England. Only unsettled conditions abroad have prevented a more rapid expansion of this export trade.

Working in three shifts, about 1,200 men and women are employed at the Cornwall plant, representing an increase of 60 percent over the highest level of employment in pre-war years.

It is said that the only part of a pig discarded by the packing houses is the squeal, but pulp and paper companies are striving to utilize every particle of a pulpwood log including its bark. Out of the liquor residue from pulp the Howard Smith research department has already developed a by-product, vanillin, which is the principal aromatic ingredient in vanilla flavouring, and the Cornwall mill is now said to be making enough to meet

the requirements of the whole British Empire. It is also making laminated plastic building and table-top board by impregnating paper with lignin—a powder resembling cocoa in appearance, which is separated from the waste liquor of the soda pulp process.

Increased Output

Alliance Paper Mills—a Howard Smith subsidiary at Merritton—manufacture a wide range of commercial and general utility papers, extending all the way from "onion skin" to flour sacking. There are two mills—the Lybster, which, in 1947, turned out an average of 70,000 pounds of paper a day, and the Lincoln, with a daily production of 30,000 pounds. The increase of output over the pre-war level of 1939 has been approximately 20 percent.

Both Alliance mills have been steadily substituting electrical equipment for older types of drive. In 1939 the maximum demand on Hydro was for 1,544 horsepower, and during that year electrical energy consumption was 5,640,000 kilowatt hours. In 1947 the maximum demand was for 5,100 horsepower and the consumption of electricity was tabulated at 13,500,000 kilowatt hours. It is expected that there will be a jump of 750 horsepower in the load demand for 1948.

After a chat with R. C. Shearer, the manager at Merritton, Hydro News viewed the highlights of production under the guidance of the electrical superintendent, H. McKay.

Hydro Power comes in from the Commission's sub-station at Thorold at 13,200 volts and is stepped down to 550 volts for distribution in the mills. Power, transmitted at 2,200 volts, is also supplied by the local Municipal Hydro commission.

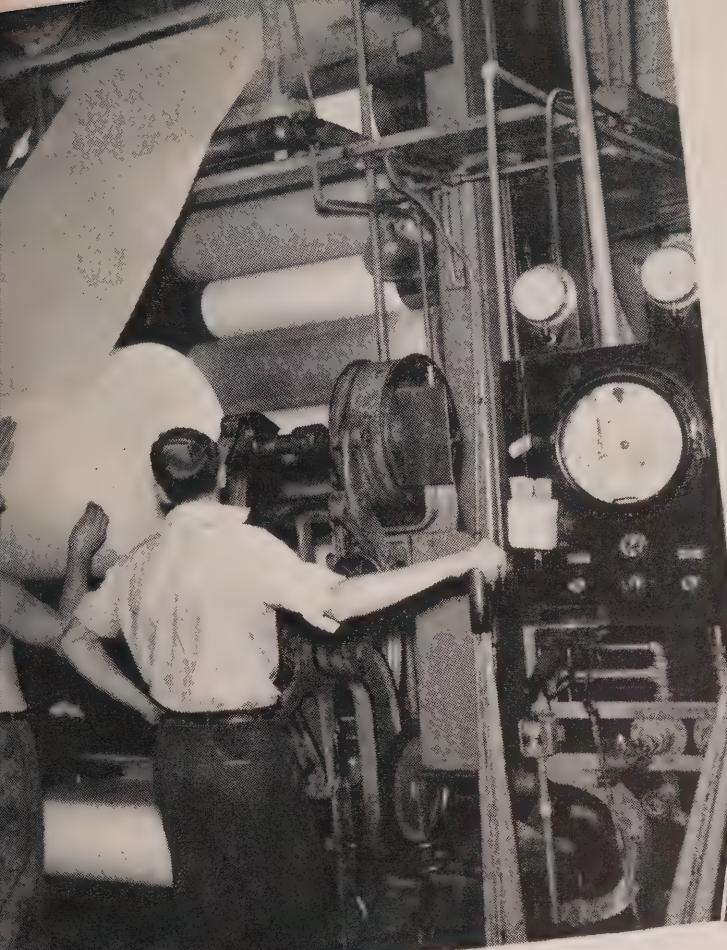
The Alliance mills use 50,000 cords of pulpwood a year and make their own sulphite for pulp production. Some 95 tons of bleached sulphite are processed every day.

Hydro Helps Lake Erie

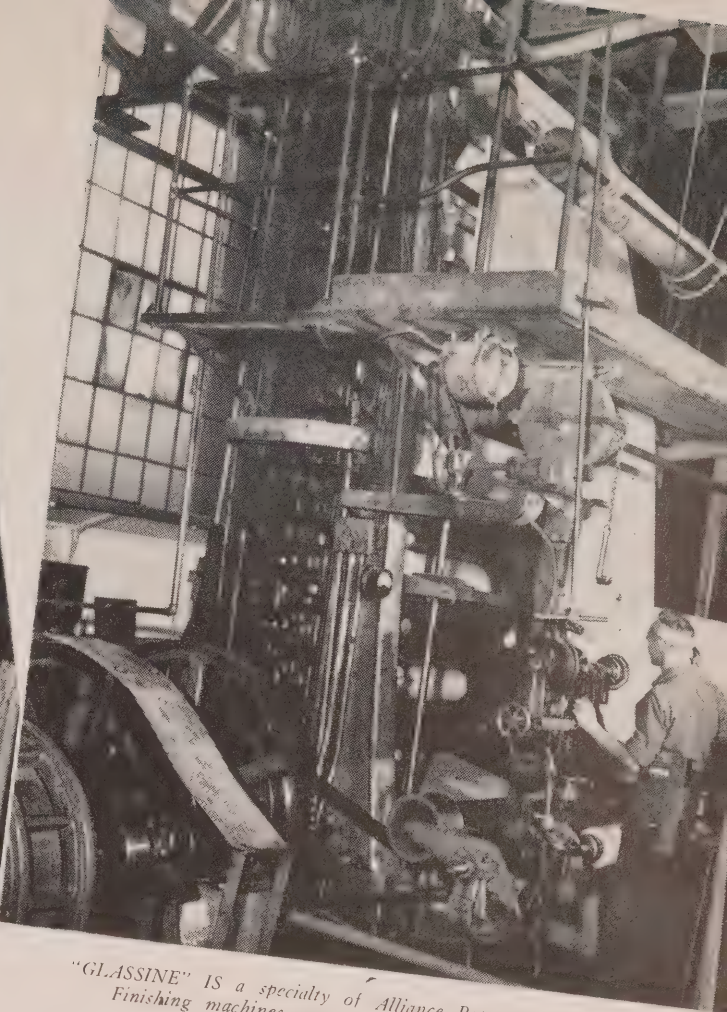
Water from Lake Erie can be brought almost up to the top of the Alliance mills by gravity—an immense economic advantage to an enterprise which uses many thousands of gallons a day. However, for the hydraulic "barking" of the logs a pressure of about 800 pounds to the square inch must be exercised, and Hydro power is used to get the right results from its unconverted relative. There is a 300-horsepower motor for the main pump and a 20-horsepower booster motor, and motors for the barking drums themselves, totalling another 80 horsepower.

The Lybster mill produces the lighter-

(Continued on page 14)

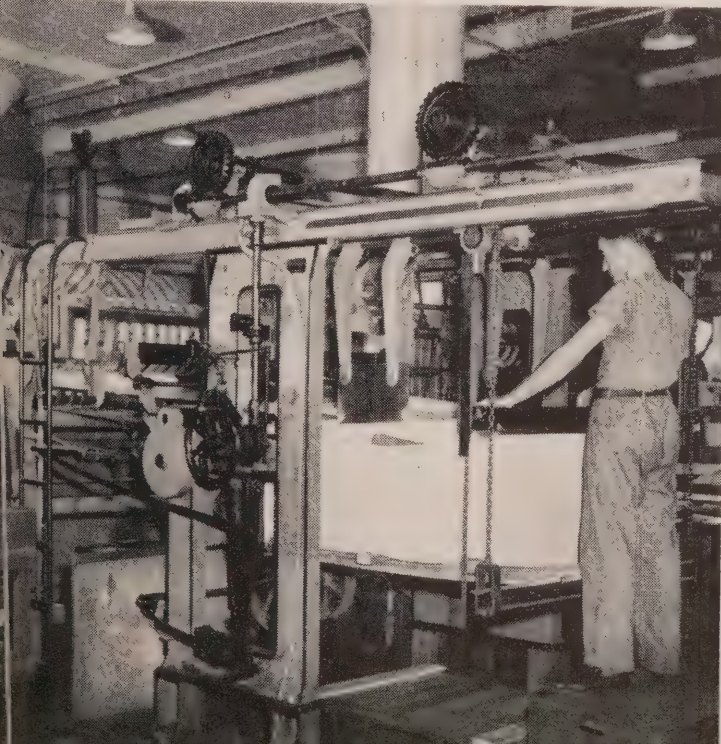


A SUPER calender machine is employed to put a finish on special papers. It is equipped with a 75-horsepower drive.



"GLASSINE" is a specialty of Alliance Paper Mills at Merrittton. Finishing machines are driven by 100-horsepower motors.

ELECTRICALLY CONTROLLED machines cut and trim the paper to customer specifications—then it is given a final inspection.



GIRLS HAVE the preferred "touch" for sorting paper. They have also an eye for defects—in paper as well as in menfolk.



TO SAVE ALL POWER POSSIBLE WITHOUT DISTURBING ECONOMY HAS BEEN HYDRO'S OBJECTIVE

By Grace J. Carter,
Hydro News

While it had been necessary to introduce a system of limited power rationing in view of the existing deficiency in the matter of available power supply, the Commission had made every effort to avoid disturbing the general economy of the Province.

This point was emphasized by W. Ross Strike, K.C., Second Vice-Chairman of The Hydro-Electric Power Commission of Ontario at District No. 4 O.M.E.A. annual meeting in the Royal York Hotel on January 22.

Some retail merchants, he said, had felt that the recent power restrictions might affect their business. The speaker pointed out, however, that statistics indicated that over-all sales during last December had been 15 percent higher than at any previous period.

Mr. Strike also stated that these restrictions combined with the complete co-operation of all classes of consumers in saving electricity at all times might, according to present indications, enable the Commission to carry on without having to take drastic action. There was, he warned, always the possibility that

Statistics Indicate Commission's Limited Power Rationing Has Not Affected Business, W. Ross Strike, K.C., Tells District No. 4 O.M.E.A. Delegates — Meeting In Toronto

ice conditions might cause a major breakdown, while there was another problem that had to be faced—that of subnormal rainfall which had been experienced, particularly in Northeastern Ontario. A helpful factor in the present situation was that the days were lengthening, stated Mr. Strike.

He pointed out that some people wondered why the Commission had made extensions of service in the face of the present power deficiency.

"Some people say," the speaker stated, "why on earth do you put in electrical service to new consumers and give new industries a chance to start in the Province when you cannot supply the consumers you have."

New Energy

The Commission, he said reasoned it this way. Next year they hoped to bring into the Southern Ontario system

100,000 kilowatts of new energy. It was felt that that would take care of normal growth and possibly leave some to spare. He said that some of the difficulties were caused by climatic conditions and that in the four winter months the demand increased. It had been proven this year that by cutting down non-essential use of power they could "get by" through the peak months. He went on to say that the Commission felt that in the interests of the Province as a whole it would be bad business to say to new home owners and industrial users: "You will have to mark time until we get ample power to serve you."

The Second Vice-Chairman went on to say that next year they also expected to do considerable extension work in the rural field, and there again they believed it was justified because the production of food was certainly one of the Province's essential needs. The farmer with his labour difficulties, he said, was lost without electricity and the more electricity made available to the farmer, the better the farming conditions with a resultant increase in production of food.

Mr. Strike referred to the Regional offices now being established and said a book of procedure and instructions was being prepared and would be sent to

(Continued on page 26)



HERE ARE O.M.E.A. District No. 4. officers for the ensuing year, left to right: J. G. Reid, Past President, Port Credit; Frank Pownall, Mimico; Albert G. Jennings, Secretary-Treasurer, East York Township; Loftus H. Reid, President, Toronto; A. O. Leslie, Vice-President, Scarborough Township; Gordon Patinson, Toronto Township; W. P. Dale, Brampton.



ON THE left we have W. Ross Strike, K.C., Second Vice-Chairman of the H.E.P.C., taken at the "mike".



THIS SMILING group of delegates includes L. J. Ferrie, Mimico; Jim Wickiam, East York Township; H. Bush, Mimico; Harry Foy, Toronto; W. G. Jackson, New Toronto; A. O. Leslie, Scarborough Township; Frank Pownall, Mimico; R. V. Thorne, Port Credit.



MRS. KATHLEEN Kestell, Secretary-Treasurer of the O.M.E.A., graciously accepts flowers from Roderick Brown, North York Township, as a token of appreciation for her co-operation.



GORDON PATTINSON, (left) Toronto Township, and J. S. Beck, Brampton, talk things over just before the meeting gets underway.



BERT MERSON, (left) Vice-Chairman, and E. M. Ashworth, General Manager of the Toronto Hydro-Electric System, discuss some knotty problems with H. R. McClymont, Manager, York Township Hydro-Electric System.



ELECTRICALLY-POWERED sewing table designed to provide the workers with maximum efficiency as well as maximum safety. There are no exposed belts or moving parts of the machinery. The power is supplied for the whole table by two motors at the end. Over each sewing machine is an adjustable 12-watt light constructed on the lens principle which focuses a strong needle-point of light directly on the work.

HYDRO ALSO SERVES AS AID TO TAILOR

It has been said that the mechanized sewing machine has saved more human toil than any other one invention. This may not seem so astonishing if we remember that up to less than one hundred years ago every single item of wearing apparel had to be laboriously sewn by hand. Today, thanks to mechanized equipment and Hydro power, great tailoring firms such as the one pictured on these pages can turn out well-made, good-looking garments at a rate that would seem nothing short of miraculous to our grandparents.

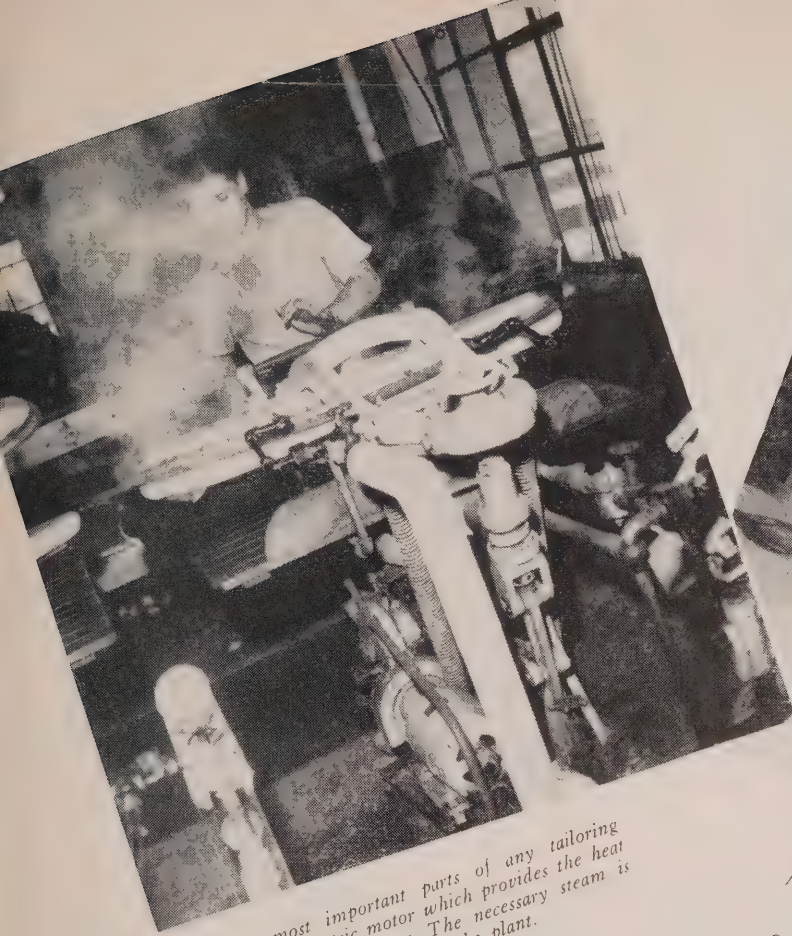
This particular tailoring firm purchases power from Hydro at 550 volts (A-C) and this is then converted by a trans-

former to outlets of both 110 volts and 220 volts for the wide variety of operations that go on in the plant.

The large pieces of machinery involved in processing the cloth, that is shrinking and drying, use both 550 and 220 volts. The majority of the smaller machines such as the button-hole maker, the electric pressers and the sewing machines use 550 voltage. The electric cloth cutting machines require direct current which is supplied by a generator in the engineer's office.

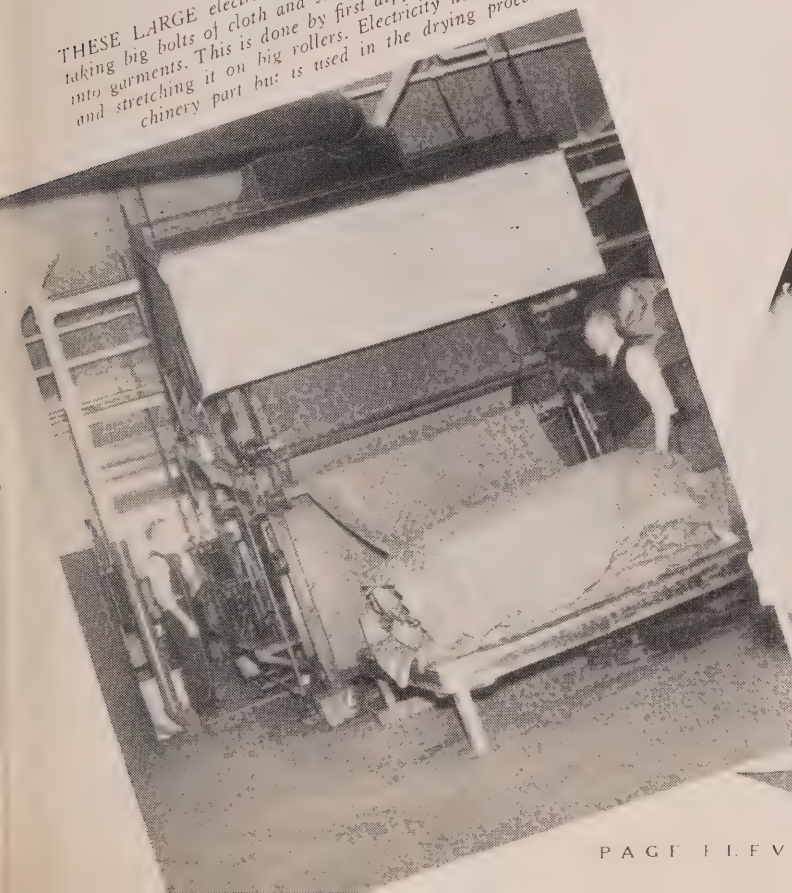
Each of the many electrical processes is handled by skilled operators who work with speed and efficiency. A social historian has pointed out that machines

such as these coupled with the mechanized spinning and weaving machines, have been fundamental in raising the standard of living among the masses of the world's inhabitants. At the same time it is interesting to note that few inventions have been so bitterly opposed. Back in 1830 a Frenchman patented a mechanized sewing machine which was destroyed by an angry mob because they thought that such a contraption would destroy their jobs. And on this continent Elias Howe of Massachusetts is said to have invented the first practical machine in 1845 but met with dismal failure for many years when he tried to get it on the market. It was Singer, finally, who sold the idea to the public.



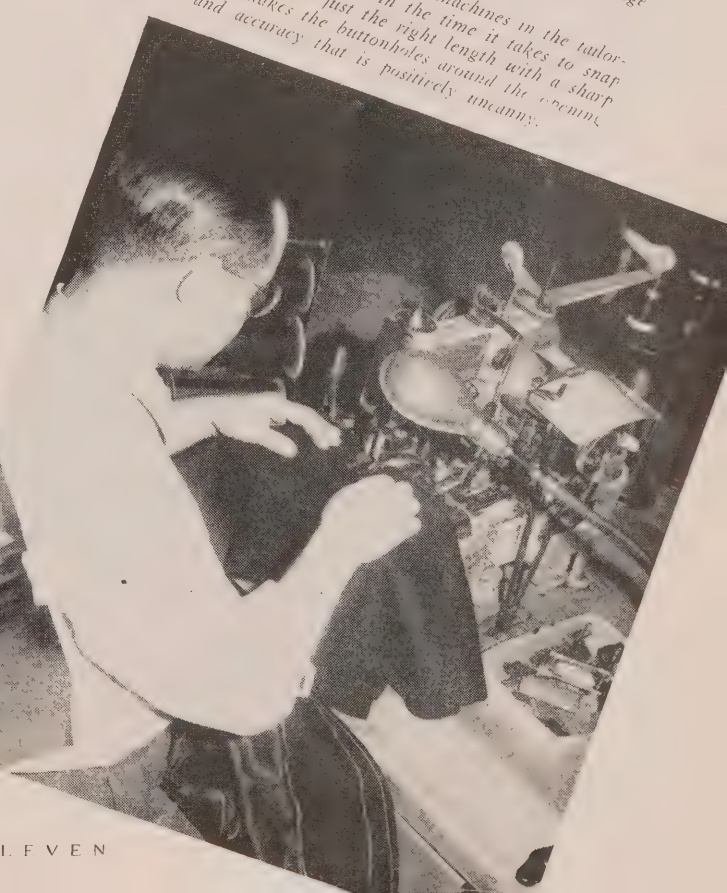
PRESSING IS one of the most important parts of any tailoring business. This press has its own electric motor which provides the heat and controls the mechanism of the presser. The necessary steam is piped up from the central supply in the plant.

THESE LARGE electrically-run machines have the important job of taking big bolts of cloth and shrinking them before they are made up into garments. This is done by first dipping the fabric and then drying and stretching it on big rollers. Electricity not only operates the machinery part but is used in the drying process as well.



THIS HANDY electric cutter with its $\frac{1}{4}$ -H.P. motor can bite through 300 layers of cotton at once. It is not used for cutting the garments themselves but is used to cut those parts such as overcoat pockets, inside vest linings and so forth where there is no disadvantage to cutting so many at once.

ONE OF the most ingenious (and expensive) machines in the tailoring business—it can make a buttonhole in the time it takes to snap your finger. First it cuts the cloth just the right length with a sharp blade and then it quickly makes the buttonholes around the opening with a speed and accuracy that is positively uncanny.



ELIMINATION OF WASTE IN USE OF ELECTRICITY IS URGED BY ROTHWELL

By Grace J. Carter,

Hydro News

An appeal for the co-operation of all municipalities in helping eliminate waste in the use of electricity was made by H. D. Rothwell, Special Assistant—Regions, when addressing District No. 8, O.M.E.A., at Chatham on January 27.

Consistent and conscientious conservation of power at all times during this period of temporary emergency, he believed, would greatly alleviate the power supply situation pending completion of

new plants now under construction.

Mr. Rothwell, in continuing, emphasized the Commission's present problem in keeping pace with pyramiding load demands. Citing the situation in Chatham as an example, he pointed out that this municipality's peak load in 1938 had been 6,295 horsepower. By 1942 it had increased to 7,900 horsepower and in 1945—the year the war ended—it had reached 8,200 horsepower, while last year it had climbed to 12,982 horsepower.

That condition, Mr. Rothwell stated, was prevalent in practically all munici-

palities throughout Ontario.

He reminded his audience that the Commission at the present time was engaged in an all-out programme of new plant construction to make available more power as quickly as possible. By next September he said, it was expected that the plant now being built at Stewartville would be placed in service to add 60 000 kilowatts to the Commission's resources. At the same time, Mr. Rothwell stated that a power contract had been negotiated with Polymer Corporation, Sarnia, for 20,000 kilowatts, and it

(Continued on page 23)



NEWLY ELECTED officers for District No. 8 are, front row, left to right: J. Clark Keith, Windsor, Secretary-Treasurer; Gordon H. Fuller, Windsor, Chairman; Charles Austin, Chatham, Vice-Chairman; Second row, left to right: W. P. Bolton, Windsor; A. P. St. Louis, Riverside; E. C. Morand, Tecumseh, Directors.



ABOVE ARE J. Clark Keith, Windsor; Fred Biette, Chatham; R. M. Durnford, President of O.M.E.A., Sarnia; Mayor R. D. Steele, Chatham.

LOOKS LIKE P. E. Battram, (left) of Sarnia is telling a "good 'un" to J. L. Stonehouse, E. H. Matthews and Stanley Ellerker, all of Forest.



THIS SMILING group of delegates are from left to right: Paul Ducharme and Elsie Arbour of Tecumseh; J. R. Attridge, Highgate; G. N. Galloway, Sarnia; H. W. Thompson and G. L. Mistele of Rodney.

HERE ARE (below) William Gray, Chatham, H. D. Rothwell, H.E.P.C., R. S. Reynolds, Chatham, and R. M. Durnford, Sarnia.

GODON H. FULLER (left) of Windsor, (below) listens attentively to H. D. Rothwell, Special Assistant—Regions, who later was the main speaker at the meeting.



HYDRO IN PAPER MILL

(Continued from page 6)

weight papers which are used so extensively for packing food and lining food containers. Alliance is said to be the only manufacturer of "glassine" in Canada. This is a special type of paper which is made transparent by pressure. Three super calender machines are employed in the finishing processes and each of these is equipped with a 100-horsepower motor drive and with a 5-horsepower motor for threading. Wrappings for chocolate bars and candies are now extensively made from "glassine." "Kraft" carbonizing and other specialized tissue papers are also produced.

The Lincoln mill manufactures the heavier grades of paper which go into such products as Kraft cable insulators, paper board, drinking cups, ice-cream containers, and paper sacking—including a new type of bag for shipping potatoes to distant points in box-car lots. And here also are manufactured many varieties of paper bag.

Taking the two mills together, Alliance now employs approximately 500 people—double the number on its payroll in 1939. Increased production is, of course, the basis for increase in employment, and in the near future facilities for production will be further improved by additional electrical installations.

New Electric Drive

With the present steam equipment Number 1 paper machine at the Lybster mill is capable of turning out paper at a rate of between 200 and 480 feet a minute. The minimum speed is satisfactory but the maximum speed is not fast enough to meet anticipated production requirements. Taking time by the forelock, Alliance is putting in an electric drive which will bring the speed up to a maximum of 750 feet a minute. At the time of the visit paid by Hydro News an indirect "cooking" system governed by electronic controls, for the processing of pulp was also to be introduced in the sulphite mill.

The Georgetown plant of Alliance Paper Mills, produces coated papers from raw stock papers made at Merritt Division, and has recently installed a high speed "Microjet" air brush coating machine, together with a new high speed sheet cutter. This equipment is all electrically powered, and future plans anticipate even more electrical drive.

It was understood that these installations round out the essential electrical equipment required for the moment. But pulp and paper is an expanding industry and, undoubtedly, as more power becomes available, such an expansion will receive ever-increasing impetus.

QUARTER CENTURY CLUB WILL ADD 50 NEW NAMES

During 1948, fifty new names will be added to the membership roll of the Ontario Hydro Quarter Century Club, and this will bring the total to approximately 950. The following list was made available to Hydro News by S. L. Eisenhofer, Secretary of the Club:

LADIES

Name	Department	Location
Griffe, Leah	Accounting	Toronto
McKenzie, Florence Marie	Accounting	Toronto
McLean, Helen E.	Secretarial	Toronto

MEN

Name	Department	Location
Adams, Reg. McKenzie	Operating	Niagara Falls
Allen, Johnston	Operating	Markdale
Armstrong, Ashley	Operating	Bingham Chute
Ashton, Laston Eric	Research & Test.	Montreal
Barclay, Walter James	Accounting	Toronto
Barr, James	Operating	Niagara Falls
Belfry, Arnim Earl	Operating	Bala
Blakely, William	Accounting (Strachan Ave.)	Toronto
Burton, Herbert Kingman	Operating	Niagara Falls
Bennett, Earl Gruer	Municipal	Cayuga
Bratley, Jesse	Operating	Niagara Falls
Cameron, Donald William	Operating	London
Crawford, John Noble	Elec. Engineering	Toronto
DeVaul, Frederick Mason	Operating	Morrisburg
Ditchfield, James John	Operating	Cameron Falls
Douglas, Andrew Cecil	Operating	Toronto
Dustan, Ernest Bruce	Elec. Engineering	Toronto
Ellerbeck, Richard Arthur	Operating	Niagara Falls
Gardiner, Frederick S.	Operating	Hamilton
Glennie, Erle William	Operating	Chippawa
Hannon, Anson Henry	Operating	Hamilton
Harrison, Thomas Bateman	Operating	Niagara Falls
Horkins, Cecil George	Property	Toronto
Jones, George Humphrey	Operating	Davenport
Lamb, William Eric	Operating	Niagara Falls
Littlefield, Frank Edwin	Operating	Dorion
Millar, John Edmund	Operating	Dalhousie Lake
McAra, James	Operating	Niagara Falls
McClure, Joseph L.	Operating	Niagara Falls
McGarry, John Joseph	Operating	Toronto
Parnell, Frederick Douglas	Accounting	Toronto
Pearson, Ernest Wilfred	Elec. Inspection	Toronto
Pickles, Alfred George	Operating	Markdale
Pool, James	Operating	Niagara Falls
Read, Arthur Douglas	Operating	Niagara Falls
Robertson, William Erskine	Operating	Hamilton
Ritchie, James Glen	Operating	Toronto
Searles, Robert Cecil	Operating	Peterborough
Sharp, William	Elec. Engineering	Toronto
Sherman, Willard	Mun. Engineering	Kingsville
Smith, Cleve Alexander	Elec. Engineering	Toronto
Stonehouse, Roscoe James	Elec. Engineering	Toronto
Swain, Henry Clinton	Operating	Brantford
Tate, James Henry	Operating	Eldorado
Vance, William John	Purchasing	Toronto
Walton, Richard	Accounting	Toronto
Whitehead, Russell George	Operating	Cameron Falls

HOSPITAL AT DES JOACHIMS MODEL IN EVERY RESPECT

By Harry M. Blake,
Hydro News

At Hydro's construction camp at Des Joachims is a 30-bed hospital designed and planned by Dr. R. W. I. Urquhart, the Commission's Medical Director. The hospital is a large one-storey building constructed along the lines which the Royal Canadian Army Medical Corps have found so satisfactory. The resident physician in charge is Dr. D. K. Grant, a graduate of the University of Manitoba. The staff at present consists of two graduate nurses, Miss M. Malcolm and Miss G. Elliott; an X-ray technician and first-aid man, John McVicar, and a bilingual ambulance driver, Robert Burns. This personnel, it is stated, will be increased if the need develops.

Medical Examination

Before starting work, all men, on arrival at the camp, are examined by Dr. Grant to determine whether or not they are free from contagious or infectious diseases. A further check-up is also made with a view to discovering any serious organic disease or disability which might make a man unfit for his job. Every man now starts work with a blue card indicating that he is in good health and physical condition. But, with 2,000 to 3,000 men employed, there are bound to be accidents, and even the salubrious and vivifying air of the North is not an entirely reliable guarantee against the incidence of sickness and ill-health.

The hospital is especially designed for the treatment of short-term patients. Cases requiring more advanced surgery than the camp hospital is set up to provide and those requiring prolonged hospitalization will be sent on to town or city hospitals. These arrangements will enable the surgical and medical facilities at Des Joachims to meet the demands made upon them and will ensure the maximum attention being given to individual cases.

Every Modern Facility

The interior arrangements and equipment of the hospital were planned by Dr. Urquhart in consultation with Dr. Grant. When completed, there will be a fully-equipped operating room for treating accidents and carrying out surgical operations as well as suitable X-ray equipment to facilitate diagnosis and treatment.

In the case of serious accident or illness, patients will be accommodated in

2-bed or 4-bed wards. As convalescence progresses, they will be moved on to a 12-bed ward which also serves to accommodate those who have required only minor surgical or medical attention from the start. There will be a bright and cheerful dining-room for these up-patients where they can have their meals together. An isolation ward will accommodate any patients suffering from contagious or infectious diseases, and a separate ward is being provided for women. A well-stocked dispensary will look after all medical needs.

Modern Sanitary Kitchens

The food for the hospital will be sent over from the modern, sanitary kitchen in the Hydro cafeteria in electrically-heated containers. After being inspected and apportioned in the hospital's own

diet kitchen, it will be served to the patients in the wards or dining-room as required.

First-Aid Post

In addition to the hospital, there is a first-aid post at Camp 2 on the Quebec side of the river under the supervision of Fred Weedmark, while stretchers and first-aid kits are available at all major locations where work is in progress.

The experience of Hydro on its major construction jobs, where safety regulations are rigidly enforced and where every consideration is given to the health and comfort of the men, is that the provision of one hospital bed for every 100 men employed is usually required. It is not expected that the facilities provided at Des Joachims will at any time be over-taxed.



HYDRO'S NEW hospital at Des Joachims will be fully equipped to meet both surgical and medical needs. Here, John McVicar, X-ray technician and first-aid man, is looking over newly-arrived stock for the dispensary.



CONSERVATION AND many other matters pertaining to Hydro were discussed at length during the annual meeting of District No. 5 of the O.M.E.A. which was held at Brantford recently. Upper left photo depicts, left to right, H. L. Smye and A. W. Bradt, both of Hamilton, with William Cotton and N. A. Brandfield, of Brantford. In the upper right hand illustration K. C. MacLeod, of Stamford Township, is shown as he presented a handsome desk set to John Castor in recognition of his lengthy service as district engineer.

WOULD LIKE MORE "TEETH" TO ENFORCE CONSERVATION

By **Boyd L. Graham,**
Hydro News

Discussion of methods for attaining the greatest possible saving of power by all classes of consumers, particularly domestic, featured the annual meeting of District No. 5, Ontario Municipal Electric Association held at Brantford on January 27.

Representatives of the H.E.P.C., including Vice-Chairman Ross Strike, K.C., A. W. Manby, Assistant General Manager—Administration, and M. J. McHenry, Director of the Consumer Service Division, received many suggestions on this subject from the delegates representing 39 Hydro municipalities from Princeton and Port Rowan eastward to Niagara Falls.

**Power Saving Suggestions
Feature Meeting of District
No. 5, O.M.E.A. at Brant-
ford — Roy Pierson Is
Elected President.**

During the discussion, Roy Pierson, 1948 President of the district body, urged the Commission, when issuing directives, to give local commissions the necessary "teeth" to enforce conservation. Newly-elected Vice-President D. Cliff, of Dundas, declared that introduction of a "third rate" for domestic consumers would have a psychological effect tending to make them more careful in their use of elec-

tricity. Agreeing in principle, Arthur Cavers, St. Catharines, made an alternative proposal to reverse the present rate schedule by charging the lowest rate for minimum power consumption and increasing it as consumption became heavier.

Commissioner Strike set the stage for the discussion in replying to a question from Mr. Cavers, who expressed doubt that the restrictive order issued by Hydro last fall was working out in all municipalities.

"Is the H.E.P.C. going to adopt a plan to restrict the use of power to everyone on a fair basis?" Mr. Cavers queried.

Wrestling With Problem

"We are wrestling with the problem every day and putting all the suggestions together to try and solve it," Mr. Strike declared. "I don't think any of us have all the answers," he added.

Answering a query from the floor regarding a local commission's authority to cut power to factories, Mr. Strike



DELEGATES ATTENDED the banquet which followed the annual meeting of District 5, O.M.E.A. at Brantford. Photo, left depicts some of the guests as they enjoyed the repast. Representing a total of 36 years' service to Hydro, George F. Unger and Roy Pierson, Brantford Township Hydro-Electric Commission, are pictured, right, as they attended the annual meeting which saw Mr. Pierson elected 1948 President of District 5. Both men are original members of the Brantford Township Commission and have served continuously since it was formed in 1930. Mr. Pierson is Chairman at present.

replied that "moral persuasion" should be used to effect a reduction in consumption insofar as industries are concerned. Arbitrary cutting of power to factories should be undertaken only in the event of an overall order from the Commission, he advised.

"A great saving could be effected by prohibiting the use of trilight lamps," stated Thomas Barnes, Niagara Falls. Mr. Barnes also noted that stores were using more interior lights since window lighting had been eliminated.

Prohibiting the use of space heaters and other equipment not vitally needed was urged by William Watterson while Mr. Cavers suggested sale of this equipment should be "frozen" in stores.

"The Commission hasn't a flock of detectives running around the country to check up on every one who is using this equipment," observed Richard Thomson, of Paris, retiring President.

"The financial papers tell us that there was a 15 percent increase in retail sales during December," Mr. Strike stated in replying to Mr. Cavers' suggestion that "there should be some better system of rationing power to retail merchants."

"I am dubious of the Commission's authority to restrict sale of water and space heaters," he added, assuring delegates that the Commission was using all suggestions as the basis for a study of rationing power that would apply to all consumers.

Load Double

Pointing out that the load had doubled since 1938, Mr. Manby, in a brief but comprehensive review of the power situation, declared that "I can see no end to the tremendous rate of growth in our power load."

While the Commission had a substantial reserve of power when the war started, the limit was reached by the end of the war, "thus, we must see that power is distributed equally among all the people of Ontario," he pointed out.

Dealing with the power situation in each system, Mr. Manby expressed the hope that the Southern Ontario System would be "in a little easier position by the middle of June."

M. J. McHenry, Director of Consumer Service Division, stated that "a great many consumers have difficulty in grasping the fact that any power saving at any hour is desirable."

While paying only one-third the price for electricity, Ontario domestic consumers are today using from 60 to 70 percent more power than householders in the United States, the speaker added.

"If all domestic consumers could reduce their individual power consumption by at least 200 kilowatt hours a year, it would save 120,000,000 kilowatt hours

in the course of a year," Mr. McHenry emphasized.

K. V. Bunnell, member of the Brantford P.U.C., and Norman Grandfield, assistant engineer, described Brantford's methods of accomplishing power savings through the conservation campaign promoted by the Young Men's Section of the Board of Trade.

Approve Resolution

Delegates approved a motion introduced by Richard Thomson, retiring President, aimed at the maintaining and guarding of the rights of the municipalities. The resolution asked the parent body of the O.M.E.A. to consider engagement of a consulting engineer or an engineering firm to assist and advise this association in all matters pertaining to municipal rights in Hydro affairs.

Roy Pierson, an original member of Brantford Township Hydro Commission, was elected President of District 5, with the following executive: Vice-Presidents, D. Cliff, Dundas, and K. C. MacLeod, Stamford Township; Directors, Kenneth V. Bunnell, Brantford; Thomas Barnes, Niagara Falls; Mayor L. W. McConkey, Niagara-on-the-Lake, and William Watterson, Welland; Secretary-Treasurer, George Boucher, Paris.

Delegates to the business session and

the evening dinner which followed were officially welcomed by Mayor W. J. Dowden, Brantford.

Appreciation of the leadership of Richard Thomson, during his two years as President of District 5 was tendered to the retiring official by Mayor L. W. McConkey, Niagara-on-the-Lake, at the close of the business session.

Honour Engineer

During the dinner, high tribute was paid to J. H. Caster of The Hydro-Electric Power Commission of Ontario, for the service he had rendered as engineer for the district. Mr. Caster, who is now assuming other responsibilities with the Commission, was the recipient of a handsome desk set. The presentation was made by Keith C. MacLeod of Stamford Township on behalf of District No. 5, O.M.E.A.

26th Annual Dance

Friday, April 9, is the date set for the 26th Annual Dance of the Ontario Hydro-Electric Club. The Banquet Hall of the Royal York Hotel, Toronto, is the venue and form of dress is optional. A gala affair is planned, and everyone is invited.



R. M. McKENZIE, Regional Manager of Hydro's West Central Region, was an interested attendant at the annual meeting of District No. 5 of the O.M.E.A. with Allan Howard, Brantford Township Commissioner, right.



Hydro

HOME FORUM

by *Edithemmu Muir*

HOME ECONOMIST

Every year on February 14th, Cupid has his say. The Postman is kept busy delivering Valentines which sometimes have an air of mystery about them, especially when signed, ?-----. The one who sent the kilowatt-saving card last year must be the most silent admirer - of Hydro.

Often there are teas, children's parties or bridge clubs held on or around this day — with hearts and arrows as their decorative theme. We thought perhaps we could lend a helping hand with some plans for decorations and food suggestions:

For children's parties, paint hearts and arrows on the water glasses with bright red nail polish. It may be easily washed off later with hot soapy water.

Dress a Kewpie doll and hang a bow and arrow on him. Place him on table mirror edged with red crepe paper.

Place-cards are easily made with heart shaped cookies. Write the name of each guest in icing on the heart. Place cookie on tiny lace doily above each plate.

Valentine Coconut Balls may be made like macaroons and topped with maraschino cherries; cream cheese mixed with red currant jelly is good in Danish pastry; and an angel cake with the centre filled with pink custard filling is a special treat

When candles are too small for the holders, turn a lighted one downward until enough wax drips to form a base. Then set the candles in their own wax and hold a minute until they are firm.

Wash the broiler rack of your oven pan in plenty of hot soapy ammonia water. Dry it thoroughly before replacing and you will not have steaks or other meats smoke on next use.

LEMON CREAM CAKE

- 1 cup sifted cake flour
- 2 teaspoons baking powder
- 1/4 teaspoon salt
- 1/2 cup cold water
- 1 teaspoon grated lemon rind
- 2 egg yolks
- 3/4 cup sugar
- 2 egg whites
- 1 teaspoon lemon juice
- 2 tablespoons sugar

Sift flour once and measure; add baking powder and salt and resift three times. Add water and lemon rind to egg yolks, beat until light and fluffy. Add sugar gradually, beating well after each addition. Add flour in small amounts, beating enough to blend. Beat egg whites until foamy, add lemon juice and two tablespoons sugar. Beat until stiff enough to stand in peaks. Fold into flour mixture. Turn into two floured, deep 8-inch layer pans. Bake in a moderate oven of 350 degrees Fahrenheit for 25 minutes, or until done. Invert on rack until cold. Spread Lemon Cream filling between layers and ice with raspberry butter icing.

Soap that lasts longer! Well, any soap, bathroom or laundry bars, should be unwrapped and piled loosely in a dry place. Hardened soap will last longer.

Second phone call for reason as to why gumdrops sink to the bottom of cake batter! Maybe it's because the mixture has not enough fat or that gumdrops have not been floured first with 6 tablespoons of the measured flour in the recipe.

Why, oh why does spaghetti stick to the saucepan? Probably because water stopped boiling or because salt was added at the beginning of cooking period. Here are basic rules: Have lots of BOILING water. Add spaghetti gradually. Stir carefully in circular motion to keep long strands. Cook at a FAST boil until

tender and spaghetti no longer looks chalky. Add salt, then drain. New types of macaroni and spaghetti cook to perfection in seven minutes. Save the water for soups and gravy. No blanching or rinsing is needed for most macaroni products, but if directions call for it, use hot water.

What is the secret of safely transferring spaghetti to one small mouth? It's done by using fork in right hand, soup spoon in left; spear a few strands on the fork. Hold end of fork against spoon and wind and wind. Easy—you've got it there without thinking.

No wonder we like to be different! So far as science is able to discover, there are no two objects in the world alike, no matter whether they are natural or artificial. No two leaves or snowflakes, or for that matter no two objects manufactured by man are exactly alike.

Where does tapioca come from? It is a vegetable food obtained from the starch in the roots of a poisonous plant known as cassava. Although the milky juice is poisonous, the digestible starch is pleasant. The tubers of this tropical plant weigh about twenty-five pounds. Granules form when exposed to high temperatures with constant stirring. Pearly tapioca, a substitute product, consists of small smooth grains, prepared from potato starch.

First aid to a blouse! When nail polish was spilt over an expensive rayon blouse our nurse suggested Methyl Hydrate and it gradually came off without damaging the material.

Seeding time for Green-Thumb! Mr. R. got some pepper-ress seeds and planted them in a flower pot. In two days the greens were ready to use and in a cabbage salad! Pepper-ress is also good in meat loaf or gravy.

PROFESSIONAL ENGINEERS MEET



AT THE annual meeting of the Association of Professional Engineers at the Royal York Hotel, Toronto, on January 17, President G. L. Macpherson, (upper left illustration) presented Dr. G. B. Langford, (left) Past President, with a life membership in the Association.

In the upper right photograph Dr. G. B. Langford (right) presents Dr. C. R. Young with the Professional Engineers' Medal for outstanding achievement. The citation reads as follows: "The Professional Engineers' Medal presented by the Association of Professional Engineers of the Province of Ontario for Outstanding Achievements by one of its Members, is awarded to Clarence Richard Young, B.A.Sc., C.E., D.Eng., D.E.S.Sc.A., P.Eng., Officer of the Order of the Black Star (France), Commander of the Order of Polonia Restituta (Poland), Dean of the Faculty of Applied Science and Engineering, University of Toronto, who as distinguished Professor, Author, Civil Engineer and Dean has contributed in large measure to the Professional, Educational and Cultural Life of his Country."

In the lower picture are the officers for the ensuing year, front row, left to right: Lt. Col. W. L. Sagar; Dr. G. Ross Lord; W. R. Ishkwith; Dr. G. B. Langford, Past President; G. L. Macpherson, President; E. V. Buchanan, Second Vice-President; J. L. Lang. Back row: M. W. Hotchkiss; A. L. Scott; V. S. Murray; W. J. W. Reid, First Vice-President; W. J. Gilson; O. D. Johnston; D. G. Billings; A. N. Conklin; G. A. Caldwell.



by DR. R.W.I. URQUHART MEDICAL DIRECTOR

CALORIES

In pre-war days much discussion centered about the topic of calories chiefly among the slender and those who wished to achieve that happy state. The attractions of the mixed grill followed by a chocolate sundae or apple pie à-la-mode were carefully weighed against the mathematical certainties of their caloric content. Very often the mathematical certainties lost out. Today we are all conscious of calories for we are continually informed that a large part of our world has to get along with too few. Let us see what this really means to the individual.

The body in some respects resembles an engine—it requires fuel in the form of food to carry out its various activities. This fuel is “burned” or oxidized in the tissues, and heat or mechanical work results. In the process waste products are formed. In addition individual parts of the machine are continually breaking down and being repaired. These processes are all of a chemical nature and are described under the general term of metabolism.

It has been found possible to study the metabolism of the individual as a whole with a considerable degree of accuracy. One method utilizes a rather complicated piece of apparatus called a calorimeter. With it the total heat produced in the body from the “burning” of food stuffs or body tissues can be calculated. This is where the calorie comes in, for the calorie is the standard unit of heat. Such measurements have been made on individuals in health and disease, at rest and during physical exercise, waking and sleeping, during periods of great mental activity as well as mental rest, at all ages from infancy to old age and in both sexes.

As a result of such studies it has been shown that the total amount of heat produced (and therefore of the amount of fuel required) varies with the age, sex, state of health, body weight, and degree of physical activity. Standards have been

set up for many of these conditions. Children require more fuel than adults, partly because of the growth factor. The fat require less than the thin in proportion to their body weight. Physical activity makes a tremendous difference in the fuel requirement. The average adult city man requires about 2,500 to 3,000 calories per day. If the same man remains at rest in bed he requires only about 1700 calories. Physical exercise plus exposure to cold greatly increases the fuel requirement to 4,000 or 5,000 calories. Increased mental activity, strangely enough, does not increase materially the fuel requirement.

As mentioned above this fuel requirement is supplied from the food, or lacking food, from the body tissues. This is why people lose weight on the popular reducing diets. For the most part these diets contain about 1,200 calories, and the difference between that and the actual need of the individual is supplied from the stores of fat in the body. The caloric values of various foods have been determined with accuracy. Fats yield about twice as many calories as does protein or carbohydrate per unit of weight. One of the restaurant chains has, for years, listed next to the price the caloric content of each item on the menu. After looking at these lists, it is not difficult to appreciate that the average daily intake of an individual in this country may be often well over the 3,000 calorie mark, and adequate in its various constituents.

Situation In Europe

Compare this with the situation in Europe. The story is very different. Not only is the diet lacking in total calories, but also in its important constituents. In Britain in 1939 there was sufficient food to allow 3,000 calories per person per day. Distribution for economic reasons was sometimes a problem. From 1941 on, under an excellent system of food rationing, the daily diet was maintained at between 2,700 and 2,800 calories. The

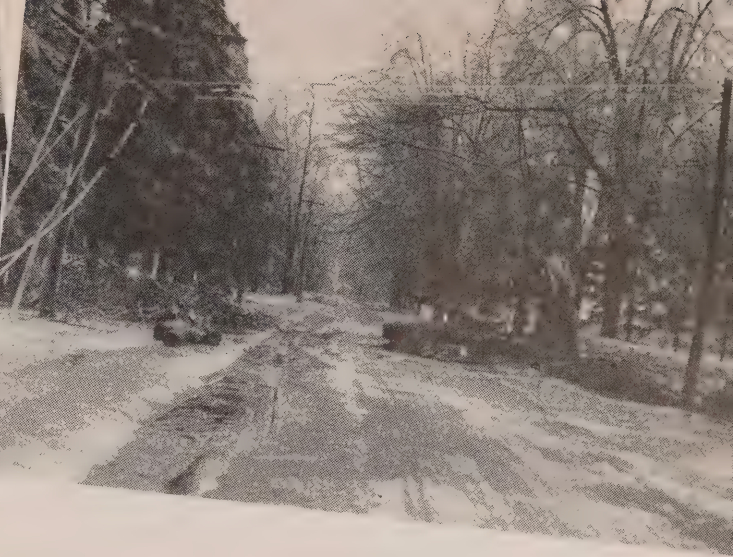
amount necessary to maintain an active healthy life is said to be 2,600 calories. There was, however, a decided shift in the constituents of the diet. Fat and protein became increasingly hard to come by, and were replaced with the carbohydrate type of diet. Those who have suffered the English “greens” will appreciate how lacking in interest this type of diet can be. It is also lacking in other necessary constituents. Good management on the part of the authorities made the most of the available resources so as to protect the children and essential workers such as miners and munition workers to a degree. With the introduction of the rationing of potatoes, etc., the situation has deteriorated and a recent study has shown that teen age children have for the first time failed to show normal growth.

Picture Much Worse

The picture is much worse over the greater part of the continent. During the war Belgium was reduced to about 1,240 calories per day on the average, as against a normal of about 2,900 calories in 1939. France in 1943 barely had 1,100 calories per person per day. A favoured few were able to obtain about 1,500 calories through black market and other activities. Germany was able to maintain her people on about 1,600 calories for part of the war at least, probably by forced export from the overrun countries.

Perhaps calories mean little to the majority of us, but when one is told that the day's rations of an employee in one of our construction camps represents about four days' rations of a similar employee in Europe, one can comprehend something of their deplorable condition.

No wonder they have not the spirit to surmount their difficulties. No wonder they look for help to this land of plenty with longing eyes. For the sake of Him who fed the multitude, can we entirely ignore their plight?



HYDRO AND telephone poles were toppled by the hundreds and ice-encrusted lines were snapped during the January sleet storm which blasted the Windsor district, causing temporary blackouts in many sections and damage estimated at \$100,000. Hydro repair crews—many from outside points—laboured day and night with the result that the heaviest damage was cleared up and service restored in comparatively short order. ABOVE: These illustrations, showing fallen poles, trees and twisted power lines, indicate the extensive damage which was done.

STORMY

WEATHER

MANY FREAKISH tricks were played by the storm. For instance take a look at this picture below showing how ice-coated wires and a wind of gale proportions had snapped a pole. On the extreme right is A. P. St. Louis, Chairman of Riverside Public Utility Commission.

MANY GLOWING tributes were paid to the Hydro repair crews for their outstanding work during the recent storm when they stayed on the job until service was finally restored. This illustration (below) shows one of the Windsor linemen in action.

(Photographs courtesy Windsor Star)



#his and #hat

By The Editor

WE CANNOT help but feel that there are thousands of active community-conscious citizens who have only a vague conception of the widely diversified activities of our Canadian Red Cross. We thought we had a reasonably good conception of Red Cross work—that was until recently when we made a tour of inspection of the Toronto branch which is the largest in the British Empire and which is located at 50 Bloor Street East. For this opportunity to see at first hand what is going on we are indebted to Mrs. Mary Dale Stott, the branch's friendly and energetic Director of Public Relations. It seems futile to even attempt to record our impressions in so limited a space. We saw and learned so many interesting things.

ONE OF the deep and lasting impressions we formed was that of the cheerfulness, friendliness and the seemingly untiring enthusiasm of the volunteer workers—all young ladies for they are all youthful in spirit if not in years. At Red Cross headquarters they work in relays from 8 in the morning until 10 at night, making all kinds of garments, typing, packing cartons and parcels or planning campaigns. One of their best workers in the sewing department is a lady who was a shut-in but who is now brought to headquarters once a week by the Red Cross and taken home again. Then at 50 Bloor Street East, they are meeting requests every day for all types of sickroom equipment from pillows and sheets, dishes and backrests to wheel chairs and crutches which are made available on loan to those who are not in a position to afford this equipment. At headquarters, we saw letters from children in Poland, Czechoslovakia and other countries to which Canadian Red Cross Relief is going. We saw equipment which was being rushed out to people who had been rendered homeless by fire.

BUT THAT is not all. Red Cross means more than that. Red Cross is the outpost hospital on the lonely frontier. It is free blood transfusions. It is aid to disabled, sick and needy veterans. It is hospital treatment for crippled children nutrition services swimming and water safety first aid and home nursing instruction It is dentures, medical aid and layettes to those in need It is volunteer visits to military hospitals It is cigarettes, candies, entertainment and other comforts for veterans and shut-ins It is the circulation of library books and provision of hot meals . . . it is the Soldiers' Club where 125 veterans of World War I are boarded It is all these and many, many other things and by reason of its international associations in this work of mercy the Red Cross is one of the greatest agencies for promoting international peace in a troubled world. In its great mission, "the quality of mercy is not strained" for race, creed, colour or politics have no place in the activities of the Red Cross.

WHILE AT Red Cross headquarters it was our privilege to meet Dr. Gordon Hyland, the President of the Toronto Branch and Campaign Chairman; James A. Traviss, Chairman of Public Relations; and that active, charming and enthusiastic Chairman of the Women's Division in the Campaign, Mrs. Lionel Conacher. We also had the privilege of meeting many of these untiring ladies who direct the various activities of the Red Cross.

AND NOW just a word about that campaign. The Red Cross urgently needs \$3,000,000, the Toronto Branch's objective being \$450,000. If any reader has any doubt about the importance of this great work, let him or her drop in at 50 Bloor Street East and see at first hand what is being done with the money. After seeing, we feel sure that most visitors will want to write cheques

long before the campaign opens on March 8.

THAT RISING tendency, which is so much in evidence these days, is becoming infectious. We, also, have gone up—from the 7th to the 11th floor. It looks, however, as if our ceiling will peg us at this point for some time In the same vein, down in Fairybury, Neb., recently a cow jumped from a truck on to the roof of a barn. Was she a descendant of the cow that jumped over the moon or was she heralding another jump in the cost of milk? These days only ladies' dresses appear to be taking a drop. Apparently it was a publicity man with an unusual sense of humour who started plugging the "New Look" idea concerning the style change. Just why we cannot fathom for nowadays, in most cases, you have either to have a good memory or just use your imagination.

FROM NEW Dundee, Ontario, comes an interesting report of a 75-watt electric light bulb which is now entering upon its 31st year of service. This bulb, we are advised, is in use at the home of a gentleman whose name is given as I. M. Hilborn who purchased it for his dining room in 1917 when he was receiving power provided by a generator in a local flour mill. With the coming of Hydro in 1925, the report indicates, the bulb, still going strong and in its element, was placed in the upstairs hall of Mr. Hilborn's home where it was used for another 13 years. In 1938 it was removed to the basement. We understand that in 1939 when this veteran lamp had established a record of 22 years of service, Mr. Hilborn received a letter from the manufacturer requesting the bulb as a souvenir when it ceased to function. The manufacturer is still waiting! It is estimated that it has burned for approximately 15,000 hours. And that story reminds us that we have to get some Hydro long-life lamps for our home.

ELECTRIC SERVICE LEAGUE'S EXECUTIVE COMMITTEE REVIEW PLANS FOR THIS YEAR'S PROGRAMME



IMPORTANT UNDERTAKINGS face the Electric Service League of Ontario. One is the current province-wide educational programme, which is being conducted in co-operation with Hydro municipalities, to emphasize the need for adequate wiring of homes, factories, farms and offices. Plans for the present year were reviewed at the first meeting of the League's Executive Committee following the annual meeting at which J. A. Blay, Promotion Manager of The Hydro-Electric Power Commission of Ontario, was elected President to succeed M. J. McHenry, Director of the Commission's Consumer Service Division. This photograph was taken just before the Committee went into session. The members are, from left to right, Norman Franks, Ontario District Manager, Canadian General Electric Company Limited; Bert Merson, Vice-Chairman of Toronto Hydro-Electric System; A. W. J. Stewart, Merchandise Manager, Toronto Hydro-Electric System, the Second Vice-President of the League; M. J. McHenry (standing), J. A. Blay, George Patterson, a contractor; (standing) R. A. Crichton, District Sales Manager, Northern Electric Company Limited, First Vice-President of the League; H. H. Gardiner, President of the Masco Electric Company, Limited; and George W. Austen, Manager of the League.

ELIMINATION OF WASTE

(Continued from page 12)

was anticipated that an appreciable saving of power would be effected through the construction of two transmission lines, one between Allanburg and London and the other from a point on the Ottawa River to Burlington. Savings in power losses along with the new generation, would total 100 000 kilowatts or 133,000 horsepower and could be considered as additional new power resources for the year 1948.

At another point, the speaker expressed the hope that the rainfall would be heavier this coming fall than it had been last year. He emphasized the importance of fully adequate water storage in relation to the generation of power. Even with the additional 100,000 kilowatts the Commission would still have a power deficiency if there were lack of adequate water storage. In closing, he reiterated the belief that with the close co-operation of the municipalities in saving electricity at all times, the industrial progress of Ontario would not

be impeded during this temporary emergency.

During the business session District No. 8 passed the following resolution: "WHEREAS the Canadian dollar today is worth sixty-six cents or less, based on the 1939 level and WHEREAS all taxation, both direct and indirect reduces the living standards of peoples, more particularly those in the middle or lower brackets of wage earners, and WHEREAS most household electrical appliances are regarded as necessities of present day living and in their operation, they utilize a natural resource which does not require an outlay in American dollars, and WHEREAS the tax now imposed on some of these household devices, together with the retailers' profit thereon denies many homes the reasonable right to these appliances, and WHEREAS this tax bears heavily on young persons, many of whom served this country honourably and without thought of gain, NOW THEREFORE BE IT RESOLVED that this District requests the removal of this recently increased excise tax which

is harmful rather than helpful at this time and that a copy of this resolution be sent to each O.M.E.A. District and to the annual O.M.E.A. meeting for their consideration."

The following resolution was put forth at last year's annual meeting which was held at Woodstock and was re-affirmed at the Chatham meeting on January 27: "THEREFORE BE IT RESOLVED in view of the changing conditions which will occur during this interval, to ensure an uninterrupted supply of power while these changes are taking place, and to facilitate the actual changeover, that the H.E.P.C. be requested to investigate and report upon, with the least possible delay the construction of a steam plant in the Windsor district as a means of removing some of the handicaps to which the municipalities are subjected from time to time."

Officers re-elected for the ensuing year are as follows: President, Gordon H. Fuller, Windsor; Vice-President, Charles Austin, Chatham; Directors: W. P. Bolton, Windsor; A. P. St. Louis, Riverside; E. C. Morand, Tecumseh.

RECORD REGISTRATION IS PREDICTED FOR A.M.E.U. - O.M.E.A. CONVENTION

Indications all point to a record registration of delegates at the forthcoming annual conventions of the Association of Municipal Electrical Utilities and of the Ontario Municipal Electric Association at the Royal York Hotel, Toronto.

The A.M.E.U. proceedings open on Monday, March 1, and the O.M.E.A. sessions get under way the following morning. Both conventions come to a close on Wednesday, March 3.

Meanwhile as J. R. Sullivan, President of the A. M. E. U., and R. M. Durnford, President of the O.M.E.A., put the finishing touches on their respective programmes, last-minute requests are rolling in for reservations and the most of Toronto's leading hotels are being called upon to provide accommodation.

At the joint luncheon on Tuesday, Professor J. C. Cameron of Queen's University will be the special speaker, while at the joint dinner on Tuesday evening, the speaker will be Don Henshaw, the well-known writer and lecturer.

The convention programmes, as announced at the time of writing are as follows:

A.M.E.U. Proceedings Open Noon, Monday, March 1 And O.M.E.A. On Following Morning—Heavy Agenda

Panel II:—Town Group—Ray Pfaff, Chairman (Room D);

Paper by George Boucher, Paris Public Utilities; Subject: Transformer Tests In Maintenance;

Paper by Earl Brydon, Canadian Line Materials; Subject: Street Lighting Control.

Panel III:—Accounting and Office Administration Group — Roy King, Chairman (Room C);

Address by R. L. Hart, Canada Wire and Cable; Subject: Training Office Employee;

Address by George Wears, Johnson and Higgins; Subject: Insurance;

Address by W. J. Keenan, F.W. Woolworth Company Limited; Subject: Office Management.

12.00 Noon:—Ballot for Election of Officers Closes;

11.30 - 12.30 p.m.—Entertainment (Roof Gardens);

12.30 - 2.00 p.m.—Joint Luncheon with O.M.E.A. (Concert Hall);

Introduction of Robert H. Saunders, C.B.E., K.C., Chairman, H.E.P.C.;

Address by Professor J. C. Cameron, Queen's University; Subject: Employee Relations;

2.00 p.m. - 4.30 p.m.—Addresses by Officers of The Hydro-Electric Power Commission of Ontario (Banquet Hall);

4.30 p.m.—Announcement of Officers for 1948;

5.30 p.m. - 6.30 p.m.—Entertainment (Roof Gardens);

6.45 p.m.—Joint Dinner with O.M.E.A. (Concert Hall);

Address by Don Henshaw, MacLaren Advertising Company Limited; Subject: Canadian Horizons; Music and Floor-show;

9.30 - midnight—Entertainment (Roof Gardens).

(Continued on next page)

A.M.E.U. PROGRAMME

Monday, March 1

10.00 a.m. - 6.00 p.m.—Registration (Convention Floor)

2.15 p.m.—CONVENTION SESSION (Ballroom); President's Address; Paper by Howard P. Seelye, Detroit Edison Company. Subject: Voltage Standardization; Paper by G. M. McHenry, Canadian General Electric. Subject: Distribution Substation Economics;

5.00 p.m. - 6.00 p.m.—Entertainment (Roof Gardens);

9.00 p.m. - 12.00 p.m.—Registration (Roof Gardens).

Tuesday, March 2

9.30 a.m.—Registration (Convention Floor); Panel I:—City Group—V. A. McKillop, Chairman;

Paper by Carl Schwenger, T.H.E.S., (Banquet Hall); Subject: The Cost of Underground;

Paper by A. L. Furrana, London Public Utilities; Subject: Underground at Bellwoods Park;

Paper by Phillip J. Croft, Canada Wire and Cable; Subject: Underground Cable Construction.

PRESIDENTIAL PARLEY



R. M. DURNFORD, (left) President of the Ontario Municipal Electric Association, and J. R. Sullivan, President of the Association of Municipal Electrical Utilities, are mighty busy these days making last minute arrangements for the joint O.M.E.A.-A.M.E.U. annual convention which is to be held on March 1, 2 and 3 at the Royal York Hotel, Toronto.

Wednesday, March 3

- 9.30 a.m. - 12.00 —Registration (Convention Floor);
- 10.00 a.m. - 10.30 a.m.—Constitution Amendments; J. E. Teckoe, Jr. (Banquet Hall); Presentation to P. B. Yates;
- 10.30 a.m. - 11.30 a.m.—Paper by W. P. Dobson, Director of Research, H.E.P.C.; Subject: Trends in Hydro Research;
- 11.30 a.m. - 12.30 p.m.—Entertainment (Roof Gardens);
- 12.30 p.m.—Luncheon with Electric Club of Toronto (Concert Hall);
- 2.30 p.m.—ADJOURNMENT

O.M.E.A. PROGRAMME

Monday, March 1

Morning

- 10 a.m. to 6 p.m.—REGISTRATION, Convention Floor;
- 9 p.m. to 12 p.m.—REGISTRATION, Roof Gardens;
- 12.30 p.m.—O.M.E.A. 1947 and 1948 EXECUTIVE COMMITTEE Luncheon and meeting (Private Dining Room No. 7).

Tuesday, March 2

Morning

- 10.00 (Ballroom)—O.M.E.A. GENERAL MEETING; President's Address; Minutes; Naming of Committees; Treasurer's Report and Report of Finance Committee; Reading of Resolutions; Committee Reports.

Afternoon

- 12.30 (Concert Hall)—JOINT LUNCHEON WITH A.M.E.U. Speaker: Professor J. C. Cameron, of Queen's University.
- 2.00 (Banquet Hall)—JOINT MEETING WITH A.M.E.U. Addresses by officers of the Hydro-Electric Power Commission of Ontario.
- 6.45 (Concert Hall)—JOINT DINNER WITH A.M.E.U. Speaker: Don Henshaw of the MacLaren Advertising Company Limited, Toronto; Entertainment.

Wednesday, March 3

Morning

- 9.30 (Ballroom)—O.M.E.A. GENERAL MEETING; Reports of Committees; Registration; Resolutions; Election of Officers; Report of Election of District Directors; Unfinished Business; New Business.

Afternoon

- 12.30 (Concert Hall)—JOINT LUNCHEON WITH A.M.E.U. AND ELECTRIC CLUB OF TORONTO;
- 2.30 (Ballroom)—O.M.E.A. GENERAL MEETING; District Reports; Unfinished Business.
- O.M.E.A. 1948 EXECUTIVE COMMITTEE will meet immediately following the close of the afternoon session in Hall "C."

CO-OPERATE IN CONSERVATION CAMPAIGN



MEMBERS OF the Junior Chamber of Commerce are co-operating with their local Hydro municipalities in helping to impress on all classes of consumers the need for increased power saving. R. L. Hearn, General Manager and Chief Engineer of the Commission, who expressed the Commission's appreciation to the Junior Chamber of Commerce, is shown as he explained some of the present power supply problems. With him are Stuart G. Krantz, Hamilton, (seated), President of the Ontario Junior Chamber of Commerce, and G. Jarvis Lyons, Chairman of the Conservation Speakers' Panel of the Young Men's Section of the Toronto Board of Trade.

TRIBUTE TO HYDRO FROM NEW ZEALAND

From Christchurch, New Zealand, has come a voluntary and spontaneous tribute to Hydro on "the information service the Commission renders" through its Annual Report.

The tribute in question is expressed in a letter from E. Hitchcock, General Manager of the Municipal Electricity Department in Christchurch.

His letter reads as follows:

"For this Department I wish to thank you for a copy of the Commission's 39th Annual Report for the year ended October 1946. Your acknowledgment card is enclosed. One feels that such a report calls for more than the card. That a comparatively small undertaking at this distance can continue to receive a report of this kind is indicative of the information service the Commission renders by this means to the electrical supply industry in many countries.

"The diversity and range of activities, the magnitude of the supply given, the rates at which it is given, and the results in the areas served, are constant

Tribute to Fred Bond On Fine Cover Picture

Many fine tributes have been received by Hydro News on last month's front cover illustration featuring an arresting aerial view of the site of the new Des Joachims development. The photograph was taken by Fred Bond, a draughtsman with the Commission's Construction Department, to whom Hydro News makes sincere acknowledgment of the courtesy extended. Mr. Bond's picture was also featured by The Globe and Mail, whose Feature Editor, Duncan Halliday, made special mention of this fine picture.

testimony not only to the work of the Commission, but to its method of administering electrical supply. Amidst the confusion of many world voices and contending forms of government and administration, the demonstration the commission gives of control administered primarily in the interests of the controlled, must continue to be a stabilizing and reassuring fact."

SAVE ALL POWER

(Continued from page 8)

all the municipalities. He warned that the new organization might not be perfect at the start, but felt that if the municipalities would be patient that with the help of the Commission staff they would be able to have an organization that would function smoothly and speedily to provide the municipalities with the best possible service.

Two-Fold Job

In conclusion he said he wanted to impress upon the local Commissioners that their job was two-fold. One was to give efficient administration to their own local Commissions, and the other was to take a sincere interest in what was being done jointly by the whole Hydro organization of which they were an important part.

H. D. Rothwell, Special Assistant—Regions, in discussing the new regional organization pointed out that the Province had been divided into nine regions with offices at Niagara Falls, Hamilton, London, Toronto, Barrie, Ottawa, Belleville, North Bay and at the head of the lakes. The purpose of the new organization, he said was to facilitate the closest possible contact and co-operation with the municipalities. In each of these areas a Regional Manager had been appointed, together with a staff to administer the affairs of the region.

He pointed out that for the time being these regions were all located in Toronto, with the exception of Niagara Falls and Belleville which already had offices in their respective districts. These regional managements would, he said, embrace part of the old Municipal Department and would also include part of the Operating Department. In other words, regional activities associated with the Commission's Consumer Service Division, the operation of the high tension stations, transmission lines and other activities relating to the delivery of power and service to the municipalities would come under the direction of the Regional Managers. It was hoped, he said, that very shortly the managers and their assistants would contact the municipalities and assist them in every way possible. The purpose of these regional offices is to bring Hydro closer to the municipalities and also to administer the rural operations.

Mr. Rothwell also spoke on power restrictions and stressed the need for continued voluntary conservation of power at all times.

Resolutions Passed

During the afternoon session which was held in the Roof Garden of the Royal York Hotel, Toronto, under the



ALBERT G. JENNINGS

Chairman of East York Township Hydro-Electric Commission was the subject of a special resolution of appreciation at the recent meeting of O.M.E.A. District No. 4. The resolution was as follows: "That the thanks of the members of District No. 4 O.M.E.A. are due and hereby tendered to Mr. Albert Jennings for his faithful and efficient services as Secretary-Treasurer of this Association, and for his long-continued devotion to the cause of public ownership."

PPAFF AT ST. KITTS

Ray Pfaff, who for the past three years has been Manager of the St. Marys Public Utilities Commission, has recently taken over the managerial post for the St. Catharines Public Utilities Commission. This position was formerly held by Peter B. Yates, who recently retired after 33 years of service. Mr. Pfaff took over his new duties the first of the month.

A. E. Fort, formerly Superintendent at Simcoe Public Utilities Commission, is now manager at St. Marys P.U.C.

chairmanship of J. G. Reid, Port Credit, Zone Number 4 O.M.E.A. passed the following resolutions:

"THAT this Association requests the Ontario Government to amend the Ontario Hydro Power Commission Act to provide that one member of the Ontario Hydro-Electric Power Commission be elected by the Hydro municipalities through their Association, and, if the Commission is increased to five members, that two of the members be elected in like manner, and that the member or members so elected shall hold office during the pleasure of this Association." "THAT we recommend to the Ontario Municipal Electric Association that plans

APPRECIATION

Just by way of showing that people do appreciate prompt and efficient service, the following letter from a consumer was received recently by R. E. Hughes, Superintendent of the London Rural Operating Area:

"I presume that about 90 per cent of your letters are complaints,—I hope you will find this one slightly different.

This morning we were late waking up—the electric clock hadn't gone off. The house was cold—the oil burner hadn't come on. The lights were off—we couldn't use too much water—the pump is worked by electricity. Sad for us, we had painters working at the house,—and gave us all kinds of obstacles to fall over while we looked in the dark for candles. It may be romantic to dress by candlelight, but it sure isn't practical. None of the men could shave—they use electric razors.

The point I wish to make is that I have been raised in a generation that takes electric light for granted. It was a lesson to me to see just how dependent we are on you people for all the comforts we take as a matter of course.

The electric clock had gone off at 5.30, and the lights were on again at 7.30. I personally wish to thank the men who operate so efficiently that we all take electricity as an act of God,—and think no more about it than we do the sun rising in the morning,—until something happens.

Thank you again."

be initiated immediately for the holding of a Summer Convention."

"THAT the thanks of the members of District No. 4 O.M.E.A. are due and hereby tendered to Mr. Albert Jennings for his faithful and efficient services as Secretary-Treasurer of this Association, and for his long-continued devotion to the cause of public ownership."

"THAT this District hereby extends a hearty vote of thanks to our retiring President, Mr. J. G. Reid, for the work he has carried on during the past year."

Speakers at this district meeting included M. J. McHenry, Director of the Consumer Service Division; R. M. Durnford, President of the Ontario Municipal Electric Association and J. R. Sullivan, President of the Association of Municipal Electrical Utilities.

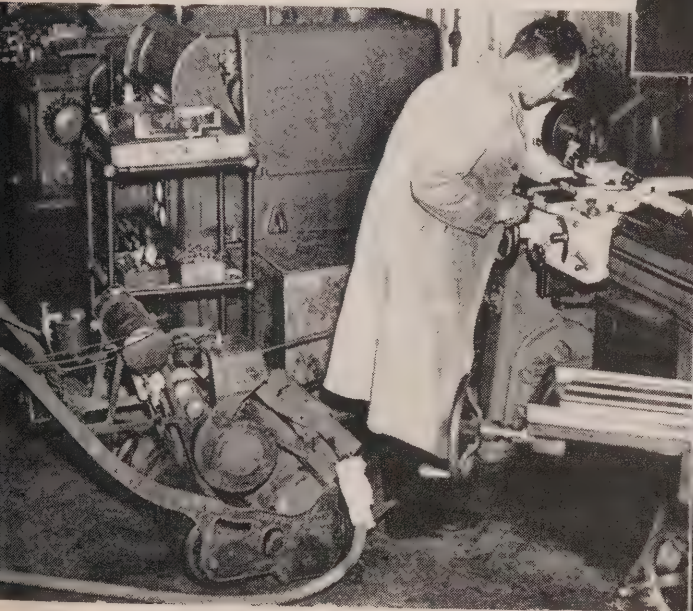
Officers for the ensuing year were elected as follows: President, Loftus H. Reid, Toronto; Vice-President, Arthur O. Leslie, Scarborough; Secretary-Treasurer, Albert G. Jennings, East York; Directors, W. P. Dale, Brampton; Frank Pownall, Mimico and Gordon Pattinson, Toronto Township.

USE CANDLES AND LAMPS AS BRITAIN CUTS POWER

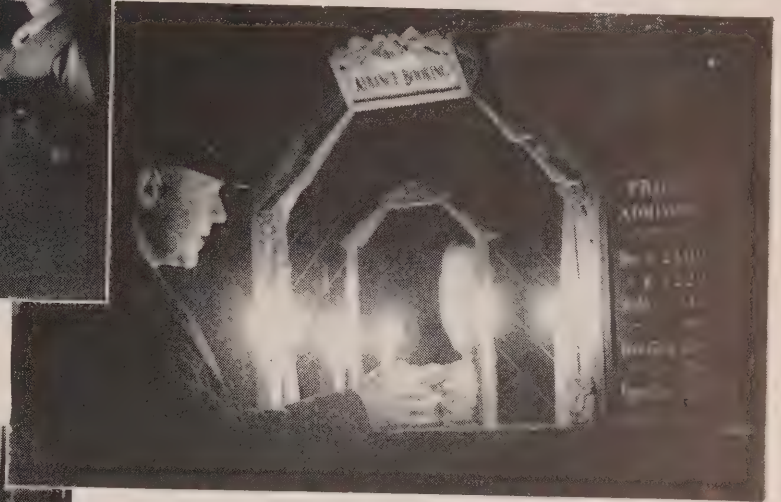
IMPROVISATION IS the order of the day as Britons face up to the rigid restrictions in the use of electricity. In homes, restaurants, stores, factories, theatres, churches and elsewhere candles and old-time lamps are being pressed into service as shown by the accompanying illustrations. LEFT: Girls at the Windmill Theatre rehearse by candle light. (More light on these subjects might have been interesting!) BELOW: Box office at London's Savoy Theatre carried on by candle light.



BELOW: EVEN lawn-mower engines are being utilized to provide power. This photograph was taken on the premises of a precision instrument manufacturer where 600 workers are employed.



BELOW: EVEN in famous St. Paul's Cathedral, London, emergency lighting has been introduced. Here, one of the clergy reads the "Lesson" in a tenebrecic setting created by an oil lamp.



BELOW: HERE customers in the Men's Department of a West End London store are shown making their purchases by the light of oil lamps during the present emergency.



BELOW: This is another typical scene resulting from the present power supply deficiency. This photograph was taken in a cafeteria snack bar.



Lighter Lines



"I said, 'It's wonderful to stand here and not hear a word you're saying'!"

Daughter: "How can a girl keep her youth?"

Mother: "Never introduce him to another girl."

There is an old Japanese proverb that says, he who rows his brother across the stream will himself arrive.

All brutes are imperfect animals. Man alone is a perfect beast.



"I wouldn't worry too much. After all, that part of the car IS called the grill."

Many superstitions have been handed down through the ages and the belief that some days are lucky and some unlucky is prevalent the world over, and probably had its origin in astrology.

A day that is good for one person may be correspondingly unlucky for another. What is one man's food is another man's poison.

To move into a new home on Friday is unlucky. Monday and Wednesday are considered particularly fortunate.

To be born on the 29th of February, Leap year, is considered lucky, and the person will be successful as a speculator.

Road sign—"Slow men at work."

Definition: Imagination is something that sits up with a woman when her husband is out too late.

*Laugh and the world laughs with you.
Weep and you weep alone,
For the sad old earth must borrow its mirth,
But has trouble enough of its own.*
Ella Wheeler Wilcox

Parents are inclined to take their children to the circus, but send them to church—John Kenfield Morley.

She doesn't dance so well, but gee how she can intermission.

Mary: "Will you love me as much in December as you did in February?"

Sam: "Oh, more, sweetheart, there are more days in December."

It was many years ago when Sir John A. MacDonald was in his prime. One day in the heat of debate, in the Commons at Ottawa, one of the Opposition members accused Sir John of stealing the brains of the Opposition. At once Sir John rose to a point of order: "Mr. Speaker," he complained, "the honourable member has accused me of very petty larceny."

Nearly every man is a firm believer in heredity until his son makes a fool of him.

*The rain it raineth on the just
And also on the unjust fella;
But chiefly on the just, because
The unjust steals the just's umbrella.*
Sir George F. Owen



"When you look at the cost of living today, aren't you glad we're not?"

Life is sometimes unkind to men. When they are born, their mothers get the good wishes and flowers; when they are married, their brides receive the presents and the publicity; and when they die, their widows receive the insurance and the winters in Florida.

Advice to an after-dinner speaker: When you find yourself at the end of a grammatical sentence, sit down. You may never be there again.



"I didn't hear you until the third time, mom!"

HYDRO AT WORK

ELECTRIC SIGNAL SYSTEMS



In the darkness of the night a slim figure creeps stealthily across the yard of a large industrial plant, intent on making his "get-away" after acquiring considerable loot. Gaining momentum as he nears the gateway, he reaches his goal—just in time to be picked up by a police cruiser!

Obviously this thief did not reckon on the electric burglar alarm system which frustrated his well-laid plans.

This is what happened. When the burglar entered the building he was not aware that the door was wired and equipped with an electric system which caused a bell to ring and a little red light to flash on in the central station. In this particular instance the station was located in an office building in downtown Toronto. On picking up the call, the operators at this "nerve centre" immediately dispatched a service car and guards to the plant. As co-operation with the local police department is part of this protective service, the message was transmitted immediately to the radio room at police headquarters. The alarm was almost instantly broadcast to police car cruisers, which in turn sped to the scene. And so with the aid of electricity the thief was apprehended in a remarkably short time.

The efficiency and effectiveness of electric burglar alarm protection has been proven many times, the operating company claims. Premises, vaults and safes may be equipped with wiring and electrical devices so that any tampering or attempted entry will automatically cause an alarm to be transmitted to the central station. Here a staff of men—on duty 24 hours a day, seven days a week—record signals, transmit alarms to police headquarters and municipal fire departments.

In addition to the electric burglar alarm protection, this company also provides automatic and manual fire alarms; automatic sprinkler supervision and watchman supervisory systems.

There are approximately 2,100 of these electric protective systems in use in Ontario, and all the alarm signals go to the central stations which are strategically located across the province.



Are You Asking These Questions About Saving Electricity?

IS IT STILL NECESSARY TO SAVE ELECTRICITY?

Yes. Not nearly enough saving is yet being made, especially in the home. Result, for some time past several large industries have had their power supply cut off for lengthy periods in the 24 hours.

IS IT NECESSARY TO SAVE ONLY AT CERTAIN HOURS?

No, it is vital to save at ALL hours. While electricity cannot be stored, water that generates it can be stored. The water storage for the five Hydro plants in the Niagara area is provided by the Great Lakes. This assures a continuous flow of water sufficient to enable these plants to go all out 24 hours a day—still there is not enough power. In 48 other Hydro generating stations throughout Ontario the water supply must be very closely guarded—if too much electricity is demanded one day, the next day's power supply must suffer. This condition is aggravated by the abnormally low rain fall last Autumn.

MUST HOMES DO ALL THE SAVING?

Not by any means. ALL consumers must play their full part. Modified rationing has to some extent reduced the consumption of electricity in stores and by other commercial consumers, but still greater voluntary savings are urgently needed.

HOW CAN I SAVE MORE ELECTRICITY?

Don't leave lights burning in unoccupied offices. Turn idling motors off. Use range elements as short a time as possible. Turn off verandah and all other lights when not needed. Use electrically heated water sparingly. Do not use electric heaters or grates.

Avoid All Waste — SAVE ELECTRICITY!

THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

HYDRO! News



EN OF THE BLADES

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MARCH, 1948

NUMBER 3

SPEAKERS' GALLERY AT ANNUAL MEETINGS



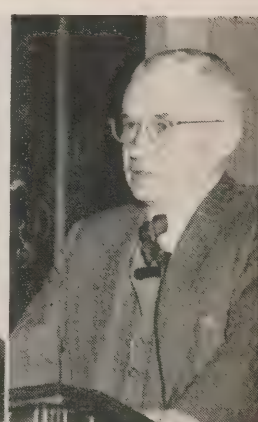
W. Ross Strike, K.C.



R. H. Saunders and J. R. Sullivan



R. H. Saunders



R. L. Hearn



Carl Schwenger



V. A. McKillop



J. E. Teckoe, jr.



George Boucher



A. H. Frampton



A. W. Manby



R. M. Durnford



Dr. Otto Holden



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THE FRONT COVER



PERHAPS we may be excused
for bragging just a little about
this month's front cover picture of
Canada's Barbara Ann Scott, World
and Olympic Figure Skating
Champion. Credit for getting this
outstanding action shot, taken at
Toronto's civic reception in front of
the City Hall, goes to Burt Helling,
Hydro News' photographer, who
had his camera "at the ready"
when she acknowledged the rousing
welcome accorded by the citizens of
Toronto.

CONTENTS

	Page
Annual Meeting Pictures - - - - -	2
Page Three - - - - -	3
Cobourg - - - - -	4
Joint Session At Annual Meetings - - - - -	8
New A.M.E.U. Officers - - - - -	10
Professor J. C. Cameron's Address - - - - -	11
Street Lighting Control Systems - - - - -	12
Chairman's Message - - - - -	13
O.M.E.A. Resolutions - - - - -	14
T.H.E.S. Honours Saunders - - - - -	15
Des Joachims Development - - - - -	17
G. E. Boucher's Address - - - - -	21
G. M. McHenry's Address - - - - -	21
R. L. Hart's Address - - - - -	22
Photographs At Annual Meetings - - - - -	23
District No. 7 O.M.E.A. - - - - -	24
Wilson Woodside's Address - - - - -	26
A. L. Furrana's Address - - - - -	28
Carl Schwenger's Address - - - - -	29
Hydro Home Forum - - - - -	30
Hutcheson Heads O.M.E.A. - - - - -	31
Around The Hydro Circuit - - - - -	32
New Chairman's First Meeting - - - - -	33
Hydro At Work - - - - -	35
Monthly Load Summary - - - - -	35
Municipal Loads - - - - -	36





THESE PHOTOGRAPHS were taken at the annual meetings of the O.M.E.A. and A.M.E.U. in Toronto. Trio on the right are J. R. Sullivan, retiring President of the A.E.M.U., his wife and daughter, Mrs. James Fleming.



LARGE REPRODUCTION shows joint luncheon on March 2. The gentlemen looking over the balcony are, from left to right, L. M. Wendorf, R. C. Bennett and R. Lethbridge, all of Dundas; G. T. Gordon and G. Chamberlain of Brantford, and F. A. Sprentall of Stirling. Other annual meeting scenes are shown below.



* Page Three *

AT EASTERTIME

Easter is generally recognized as the most joyful of Christian festivals. Apart from its deep religious significance, we associate it with Springtime—with the first shy peeping of flowers, with the return of our beloved feathered songsters, with a new robing of the earth in the colours and livery of youth.

Everything must be bright and glowing at Easter. So we colour our eggs while a chocolate bunny with pink eyes and a blue ribbon superintends proceedings from around the corner of a vase filled with pussy willows. Our womenfolk go a step further. They beautify themselves. And soon they are ready for the board walk and the Easter parade. There, they tell you, you shall see everything in the way of a "New Look" and perhaps some daring departures from anything you could have anticipated. You had mumbled something about leaving them the car and taking a walk in the park with David, but you are dragged off into this maelstrom of feminine vanity by your wife and daughter who are determined that you shall compare to your everlasting regret the hats and costumes of other women with their own.

Easter, which this year falls on March 28, is what the churches call a "movable feast," the aim of the early Church being to preserve the same relation between the times of Easter and Passover as existed at the time of the Resurrection. On this basis, Easter is celebrated on the first Sunday after the first full moon occurring on or after March 21. If the full moon occurs on a Sunday, Easter Day is the following Sunday. As the time of the occurrence of the Paschal moon varies every year, Easter Day may fall as early as March 22 and as late as April 25.

It is an old saying that an early Easter means an early spring, and after enduring such a cold and persistent winter in Ontario as the last has been, we shall all be glad if it turns out that way. Whatever vagaries the weather may have in store, however, the people of this province will have much for which to be thankful. As we look about the world this fact is so patent that it needs no elaboration.

Outside of this continent, almost everywhere there is want, while the people of many countries are subjected to a ruthless domination or torn by bitter strife. The prosperity which we now enjoy depends for its continuance upon an improvement in these conditions. And the shadows are lengthening

instead of shortening. What can we do about it?

Nations, like individuals, are influenced by example. Our best achievements in the past, in Hydro as elsewhere, have resulted from the good-will and co-operation of all classes of the community, united as freemen, not regimented as slaves. If we continue to develop along these lines, we may well do something to encourage the depressed in other countries who have been hopelessly striving for a better world. That at least is a thought for Eastertime.

FIFTH DECADE

Within the covers of the illustrated 18-page booklet, entitled "Hydro In 1947" and produced by The Hydro-Electric Power Commission of Ontario, are many interesting and informative facts presented in simple digest form under the following heads: "Reorganization," "Power Development," "Progress on Developments," "Operating Conditions," "Load Conditions," "Maintenance and Rehabilitation," "Rural Electrical Service," "1947 Financial Operating Results," "Personnel Activities," and "Research and Testing."

This booklet, copies of which were made available to O.M.E.A. and A.M.E.U. delegates at the recent annual meetings, directs attention to the tremendous programme of Hydro expansion now proceeding in Ontario. The reader is also reminded that Hydro has now embarked upon its fifth decade of service to the people of Ontario.

Among other things, this booklet gives a clear, concise summary of power developments now under construction in the Southern Ontario and Thunder Bay Systems and in the Northern Ontario Properties. The capacities are stated in both kilowatts and horsepower.

Reference is made to the organization of the nine Regional Offices which are, in effect, miniature head offices.

Attention is also directed to load conditions and it is pointed out that the combined demands for power on the Commission's systems have reached levels never before attained.

These and other facts concerning the Commission's overall operations have been concisely highlighted in "Hydro 1947."

COBOURG

By Grace J. Carter,
Hydro News

"Hardscrapple!"

At one time that was the name by which Cobourg was colloquially known.

That was, of course, long before the days when this municipality began to attain a reputation as a tourist mecca and as a famous agricultural and industrial fair centre—and long before 1933 when Cobourg became a member of the Hydro family.

And speaking about Hydro, the members of the first local Commission were H. Fullerton, Chairman; H. McGuire and Mayor John Delanty.

The load in 1933 was approximately 920 kilowatts (1,230 horsepower) and

today it is 2,250 kilowatts (3,000 horsepower). The Cobourg Public Utilities Commission is now serving 1,545 domestic, 448 commercial and 12 industrial users. In 1933, the average domestic monthly consumption was 80 kilowatt-hours and the average cost was 2.6 cents per kilowatt-hour. At the present time the average monthly consumption of domestic consumers is 192 kilowatt-hours and the average net cost per kilowatt-hour is 1.32 cents. Records indicate that the financial affairs of the local Commission have been ably administered and it is expected that the final debenture payment will be met in 1953.

The present Commission comprises Cecil W. Wilson, Chairman; John Delanty, Commissioner; Joseph S. Smith, Mayor, and Percy W. Greene as Manager, while there are 15 on the staff of the Electrical

Department and 7 in the Waterworks Section. Located on the north shore of Lake Ontario, about 70 miles east of Toronto, Cobourg is the county town of Northumberland and Durham.

To retrace the history of this municipality one must go back more than a century—in fact back to 1798 when according to the records, Eliud Nickerson, the first settler, came to the present site of Cobourg. Although the first store was apparently opened in 1802, the site was still largely a wilderness in 1813 when there were only three houses, a few small clearings and a rough corduroy road leading to the lake. The earliest settlers were mostly Americans, but shortly after this, however, emigrants from England and Scotland settled in this section, and so the place grew.

In its early days the settlement was called Amherst, and then Hamilton, after the township, and, of course, "Hardscrapple." It was not until about the year 1820 that the name of Cobourg was chosen in honour of the marriage of the

(Continued on page 6)

HAVING BECOME a popular ski resort, Cobourg, during the winter months, attracts skiers who enjoy the cross country trails and hills in the district. On the left is shown one of the tows, and on the right Betty Black of Trenton and Ken Thornton of Toronto pause for a moment before taking off on the slalom hill. The chalet can be seen in the background.





AND HERE'S a bright and attractive office in which an efficient staff is kept mighty busy. These members of the Cobourg P.U.C. are Gertrude Kaiser, Edna Smith, Rita Samons, William Woods and Evor Leonard. On the right is one of the large palatial homes for which Cobourg is well known. Built by an American family at the turn of the century, this dwelling is still occupied during the summer months by descendants of the original family.



IN THE upper left illustration we have Mayor Joseph S. Smith taken at the ski club. Mr. Smith is one of the founders of the club. The picture on the right shows some of the line gang in action. When this shot was taken they were installing a new light. The crew in the lower picture were just starting out for the afternoon's work. They are: Tom Hogan, Jack Hutton, Vic. Davidson, Cy. Winters, Mert. Gerald, Jack Cunningham, C. A. "Pat" Kelly, Fred Kerr, George Campbell, J. M. "Mac" Potts and E. L. "Rab" Burns, line foreman. "Rab" has been associated with Hydro for over 35 years.



COBOURG

(Continued from page 4)

Princess of Wales, Charlotte Augusta, to Prince Leopold of Saxe-Coburg-Saalfeld. At first both English and German spellings of the name were used to some extent, but officially the English spelling of Cobourg was adopted right from the first.

Progress was rapid from then on and Cobourg became a port of entry for lake shipping. Early in the 1830's, some of the enterprising inhabitants formed a company to build a harbour and a charter was sought to build a railroad northward. A great deal of money was spent on both these ventures.

December 29, 1854, marked the official opening of the Cobourg and Peterborough Railroad. Unfortunately, however, the trestle bridge which formed a part of the railway across Rice Lake, gave way in a comparatively short time.

As far as the harbour was concerned, an artificial one was so constructed that it was protected by breakwaters built into the lake. This is probably the reason why the port is open the year round. For many years now, from this port two large car ferries have plied daily between Cobourg and Charlotte, which is the port for Rochester, New York. These boats also provide first class passenger accommodation, and during the summer many tourists enjoy the delightful summer breezes aboard ship.

In June 1837 the settlement was incorporated as a village and was governed by a Police Board consisting of a president and four members. In 1850 the village was incorporated as a town, with William Weller as its first mayor.

The cultural and social aspects of the town were not neglected and from 1836 to 1887 it was the seat of Victoria University, which was removed to Toronto in 1892. The old college building in Cobourg is now used as a hospital. The National Societies of St. George, St. Patrick and St. Andrew were prominent in the community in the nineteenth century and the Volunteer Fire Brigade added much to the social activities of the town, particularly when they held such events as the Firemen's Parade and the Grand Ball. Then too there was the Mechanics' Institute which was the forerunner of the present public library system. Many notables came from far and near to see the Agricultural and Horticultural fairs. The Provincial Exhibition, which is said to have been the beginning of the Canadian National Exhibition, was held in Cobourg in 1848 and again in 1855.

Cricket proved very popular in this

community in the 1840's and matches were played with neighbouring towns. The story is told that when Cobourg met the Hamilton Club, three days were set aside for the event; one to make the journey by steamship, one to play the match, and another day to return home. Lawn bowling was also very popular and Cobourg boasts of having one of the oldest bowling greens in Ontario. It is still very much in use. Today of course they also have baseball, golf, curling and hockey.

One cannot think of Cobourg without associating it with the large palatial homes in settings of well-kept attractive estates. These luxurious dwellings were built by Americans at the turn of the century so that they could spend the summer months enjoying the "champagne" air of this attractive town. It was during



"SOMETHING TO remember me by." When H. A. McIntosh, former Manager at Cobourg P.U.C. left last summer to take over his duties as Superintendent at the Des Joachims development, he left his hat and pipe in the Cobourg office.

these months that the Cobourg Horse Show became world famous and attracted these summer visitors as well as many wealthy Canadians. The Horse Shows continued until 1928 and it is said that several world records were established at these meets.

Needless to say during these periods the town's seven hotels were crowded to capacity and the metropolis took on quite a cosmopolitan atmosphere.

The industrial progress of this municipality of approximately 6,700 inhabi-

tants has been steady, particularly in the past ten years, and some of the leading industries include the Douglas-Pectin Limited which manufactures Certo; Edwards and Edwards, a tannery; The Cobourg Dye Works; Canadian Cannery Limited; Dominion Wheel and Foundries Limited; H. W. Cooey Machine and Arms Limited; Lydia E. Pinkham Medicine Company, as well as others. The Canadian General Electric Company are at the present time building a very modern plastics plant in this area, and it is said that, when completed, it will be one of the largest of its kind in Canada.

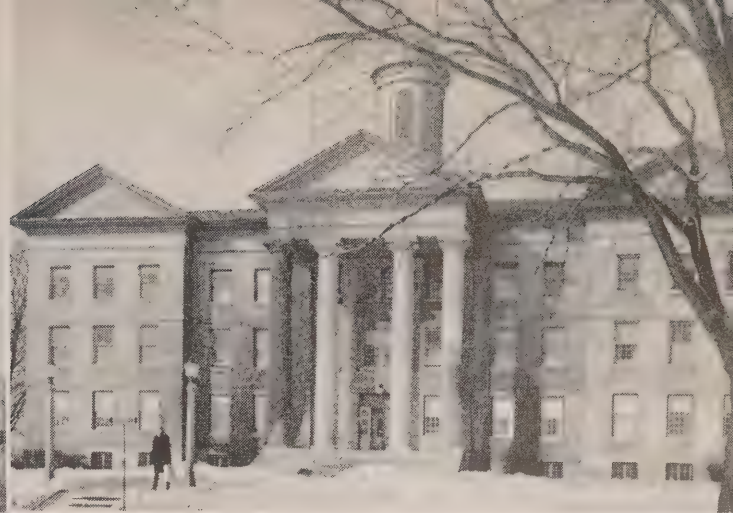
Cobourg is very proud of its fine white sandy beaches which attract many thousands of visitors each summer. Adjoining the main beach is Victoria Park which is equipped with playgrounds, swings, slides, a merry-go-round, a dance pavilion, tennis courts and bowling greens. Another attraction is the evening band concerts which are held regularly in the Park. For those who indulge in the "Royal and Ancient," there is a golf course just north of the town.

Cobourg is also a popular winter resort, and each weekend many skiers enjoy the cross-country trails, slalom hills and the use of two tows of the Northumberland Forest Ski Club, which is just outside the town. The Ski Club was organized in September, 1945 by members of the county council and is operated on a non-profit basis. Incidentally, Joseph S. Smith, Mayor of Cobourg, is one of the founders of the club.

Many outstanding citizens have lived in Cobourg. Sir John A. Macdonald, Chief Justice Draper, Justice W. R. Riddell and Judge E. C. S. Huycke studied in the town's law office. In the entertainment field there are such names as Marie Dressler, Beatrice Lillie and Katherine Cornell. By the way Miss Cornell still spends her summer vacations in the pleasant surroundings of this municipality. Then there is the late Nancy McCarthy Crawford whose name will always be remembered as the town's benefactress. In her will she left large sums of money to educational and religious organizations, as well as setting aside a fund for the poor.

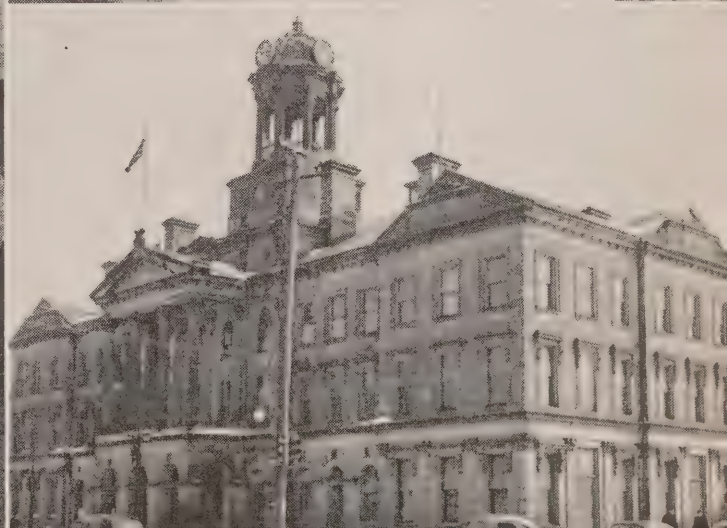
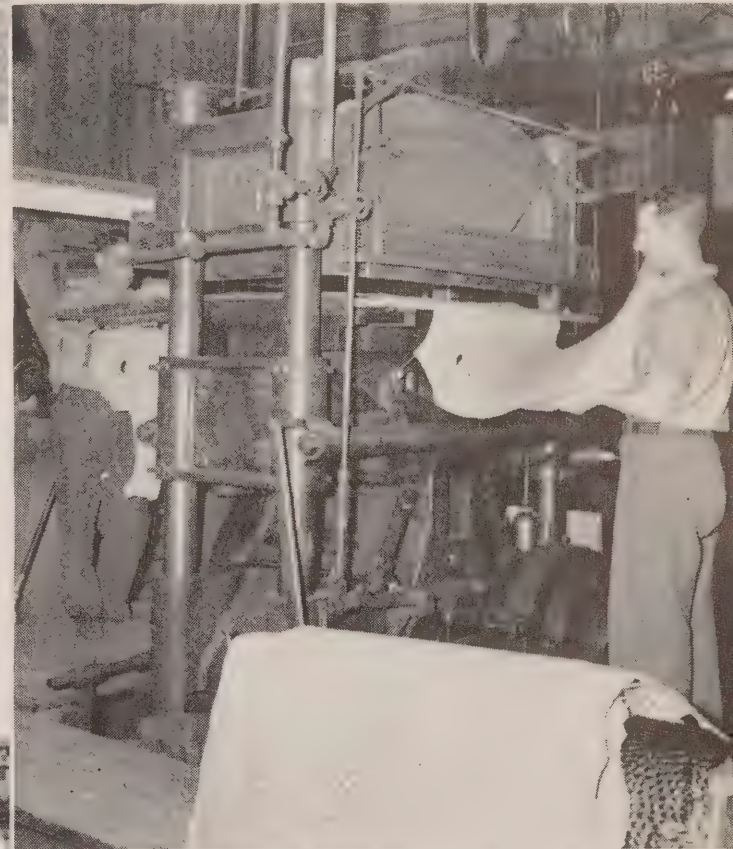
Cobourg will also be remembered as the venue of the famous libel suit brought by Sir Arthur Currie against two men in 1928. At these historic sessions Canada's First World War leader was represented by the late W. N. Tilley, K.C.

Cobourg boasts two newspapers; the Sentinel-Star which has been published continuously for more than 115 years, and The Cobourg World established in 1864.



FROM 1836 to 1887 Cobourg was the seat of Victoria University. In 1892 it was removed to Toronto. The college building (above) is now used as a hospital.

COBOURG CLAIMS to have the only port open the year round on the north shore of Lake Ontario. Large ferries ply between Cobourg and Charlotte, the port for Rochester, N.Y. The freighter shown above was carrying the equivalent of about 28 cars of coal. On the right is an embossing machine driven by a 15 horsepower motor. This machine is used in a large tannery and shows sheep skins which will eventually be used for ladies' handbags. The lower left illustration shows several milling machines which are driven by a 5 horsepower motor and which are used for making bolts, triggers and other parts of sport shot guns. The town hall (lower right) was officially opened by the Prince of Wales in September 1860. It is said that some of the stone and brick in this building came from Peterborough, England.



LOCAL COMMISSIONS THANKED FOR SPLENDID CO-OPERATION MEETING PRESENT PROBLEMS

By Harry M. Blake,

Hydro News

An assurance that there is no need for undue alarm over the present power supply situation and an outline of Hydro's vast power development programme to date and of the steps being taken to maintain essential electrical service pending completion of new plants highlighted addresses by key Commission personnel on March 2.

The occasion was the joint gathering of the Ontario Municipal Electric Association and of the Association of Municipal Electrical Utilities during the annual meetings of these groups in Toronto.

Introduce New Chairman

A record number of delegates registered for this year's sessions—well over 1,100—and the spacious ballroom in the Royal York Hotel was filled to capacity for the joint meeting during which Robert H. (Bob) Saunders, C.B.E., K.C., the newly-appointed Chairman of The Hydro-Electric Power Commission of Ontario, was introduced to and acclaimed by the delegates.

The first speaker, W. Ross Strike, K.C., Second Vice-Chairman of the Commission, drew attention to the fact that in 1947 there had been the greatest demand for Hydro power in history. The Commission had taken advantage of every possible circumstance to obtain more power and had been successful in certain cases. Hydro Quebec, Gatineau, McLaren and Beauharnois, and also the Dominion Government had given the Commission every assistance and it was only when the water levels at the Quebec plants had become dangerously low that they had been forced to cut supply.

"Squeezing Every Kilowatt"

"Today," said Mr. Strike, "we are squeezing every possible kilowatt out of all our resources. And I want to commend the work of the Commission's staff, who, in this emergency, have been breaking new ground and every day facing new problems. Our policy and their ambition is to see that this present emergency is met in such a way as to cause the least possible disturbance to all consumers and to the economic life of the province."

The speaker also wished to pay tribute

O.M.E.A. And A.M.E.U. Delegates In Joint Session At Annual Meeting Hear Outline Of Commission's Tremendous Power Development Programme — Hydro Must Meet Challenge Of Times, Says R. L. Hearn

to the municipal commissioners who were showing such a splendid spirit of co-operation at this difficult time.

Mr. Strike assured his audience that serious alarm need not be felt over the present power situation. It certainly reflected the tremendous industrial expansion this province was now experiencing. Industrial areas in many other countries were suffering much worse than our own. One had only to read the articles in American newspapers and magazines to appreciate how relatively well off we were in Ontario with regard to available electricity.

Faced Serious Shortages

There had been criticism, the speaker said, over the time Hydro was taking to bring in its new developments. Shipshaw (hydro) and Polymer (steam) had been cited as plants whose construction had been effected in eighteen months. It should be remembered, however, that these two plants had been given war-time priorities with regard to both material and labour, while the Commission had faced serious shortages from the beginning. There were also topographical and other difficulties to be considered which made the time taken in the construction of one development much longer than for another. To hurry on Hydro's power developments the Commission was exhausting the markets of this country and canvassing the markets of the world in its search for material. And it had been forced to turn to Europe for labour. So intent was the Commission upon its programmes of waterpower development being carried out with all possible speed that major developments were being planned and carried out concurrently instead of in series as would have been the case in normal times. To get actual construction going at as many sites as possible at one time, the work at Chenaux on the Ottawa and at Tunnel Site in the Thessalon district had been turned over to private contract-

ing firms with a high reputation in the hydro-electric field.

Situation This Year

"In 1948," said Mr. Strike, "we expect to bring in new power resources of 100,000 kilowatts in Southern Ontario. The Aguasabon development in the Thunder Bay area and the new plant addition at Ear Falls in the Patricia district will also come in. With normal weather conditions there should be no deterioration of the power situation in 1948."

The speaker explained that part of the new power in Southern Ontario would be diverted to rural load since the plight of the farmer with regard to labour was serious and electricity was now his best "hired man." Adequate electrical services were especially necessary in the case of well established farms since they had a bearing on the production of foodstuffs, which was to be regarded as of the highest economic importance.

Mr. Strike voiced the confident belief that, with everyone willing to take his share in the power conservation programme, the Commission would be able to provide electricity for all essential services.

Entering New Era

"There is no doubt that we are entering a new era in the development of the Province and that Hydro must bend every effort to meet the challenge of the times."

This observation was made by R. L. Hearn, General Manager and Chief Engineer of the Commission. Hydro, he went on to say, had already taken up the challenge by embarking on the greatest power development programme in its history. On this programme, capital expenditures in 1947 had been almost double those of the peak construction year on the great Queenston-Chippawa development, and the budget for 1948 was almost double that of 1947.

(Continued on next page)

LOCAL COMMISSIONS

Mr. Hearn reviewed at some length the construction programme which is now underway and pointed out that equipment ordered in 1944 and 1945 was now beginning to come through while the problem of labour supply was being gradually overcome. He also stated that in February, 1947, the relationship between the Commission and the municipalities had been closely scrutinized and reorganization had been decided upon to meet new engineering, administration and financial problems. He said that the magnitude of the present programme could best be appreciated when it was remembered that the cost was in the neighbourhood of \$320,000,000. He also noted that the number of Hydro employees had been increased from 9,000 to 13,000 during the past year, and that this number would have to be further augmented by 6,000 or 7,000 this year if all projects were to be completed on schedule.

Varied And Important Work

The speaker also referred to the varied and important work being carried out by the Commission's Research and Testing Department. He said that Hydro was a leader in Canada in concrete research and, in this department, ranked second to none on the continent.

A comprehensive outline of the various factors involved in the present power supply situation was given by A. W.

Manby, Assistant General Manager-Administration, who stressed the phenomenal increase in the demand for power.

At one point in his address Mr. Manby directed attention to the way in which the supply of power had been affected by subnormal rainfall last autumn. Storage basins, he pointed out, had not been receiving the normal run-off from the watersheds to maintain the levels and flow required for the maximum capacity performance of generators. He said that this had been especially true in the case of Quebec where companies from whom the Commission purchases power under contract had been compelled to reduce their February loads by a total of 8,000,000 kilowatt hours a week.

Mr. Manby emphasized the fact that it was the Commission's duty to distribute the available power according to the essential requirements of all classes of consumers. It was, he said, a difficult and trying task, but it was being carried out to the best ability of the Commission.

Progress On New Developments

The next speaker to address the meeting, Dr. Otto Holden, Assistant General Manager-Engineering, told the delegates of the progress that is being made at the various developments which are now under construction. He said that four major developments had now reached the stage of actual construction and preliminary surveys and land clearances were being carried out at two other

sites. In addition, extensions to generating facilities had been made at two existing power plants.

Dr. Holden emphasized the fact that the time required to complete a major development should not be considered only in terms of actual construction. The land at a prospective site, including areas which might have to be flooded, was often in the hands of private owners, and purchasing negotiations had to be completed. Then, he continued, there were the preliminary surveys, clearing and road building and the construction of camps for the men. Materials and supplies had to be brought in, suitable labour recruited and, in many cases, considerable excavation undertaken before construction of the power plant could be started.

Two Difficult Problems

Continuing, the speaker said, that scarcity of lumber and shortage of good carpenters had been two of the most difficult problems faced by the Commission. In an effort to solve this problem, he said, the Commission had been employing Bailey Bridging in many of its construction operations. This "Army" material had been utilized for temporary bridging, as trestles and as supports for conveyors and, already, it had been substituted for thousands of board feet of timber. Dr. Holden also intimated that further expansion in the use of this material was being contemplated.

AT THE O.M.E.A.-A.M.E.U. ANNUAL DINNER



HERE IS another camera impression of O.M.E.A. and A.M.E.U. delegates at the annual dinner. Don Henshaw, Toronto advertising agency executive, was the guest speaker.

NAME J. E. TECKOE, JR., A.M.E.U. PRESIDENT



J. E. Teckoe, Jr., Manager of the Galt Public Utilities Commission, was elected president of the A.M.E.U. during the recent Annual Meeting held at the Royal York Hotel in Toronto. He succeeds J. R. Sullivan of Woodstock. Other officers elected for the ensuing year were: Vice-President, J. Clark Keith, Windsor; Secretary-Treasurer, W. R. Mathieson, Toronto; Directors at large: V. A. McKillop, London; R. S. Reynolds, Chatham; O.

H. Scott, Belleville; District Directors: E. M. Ashworth, Toronto, Niagara District; Royal Quick, Brighton, Central District; R. U. Butter, Owen Sound, Georgian Bay District; M. W. Rogers, Carleton Place, Eastern District; and R. H. Martindale, Sudbury, Northern District.

Following the election the Hydro News' photographer cornered a group of

the new officers in a huddle over plans for the coming year. Shown here are: seated, left to right, R. U. Butter, J. E. Teckoe, Jr., J. R. Sullivan; standing, left to right, O. H. Scott, M. W. Rogers, E. M. Ashworth, W. R. Mathieson, R. S. Reynolds, V. A. McKillop and R. H. Martindale. Not on hand when the photo was taken were the remaining two members of the new executive, Royal Quick and J. Clark Keith.

HYDRO, BELL DEFENDED BY NEWSPAPER READER

Hydro News has received from C. Ostrom, Watchmaker and Jeweller at Alexandria, Ontario, a copy of a letter which he forwarded to a Toronto daily newspaper following publication of an editorial entitled "Monopolies." The letter, which speaks for itself, is as follows:

"In your editorial today about 'Monopolies' you say:

"Recent tactics employed to deal with power shortage could not conceivably have been used by, say, the Bell Telephone Company, etc."

In this statement I would say that you are absolutely wrong. The Bell Telephone Company is using these same tactics frequently if not daily. From time to time the Bell Telephone Company publishes advertisements asking the public to refrain from using their service

during certain peak hours. This is exactly what the Hydro did.

When the public does not heed the request of the Bell Telephone Company what happens? Simply this — you lift your telephone receiver and you hear no dial tone. This means that you are being denied service by the Bell Telephone Company. The Telephone Company did not call you personally and tell you that you could not have service for that call, the available equipment was not sufficient for you to get your call and so the service you were looking for was automatically denied you. That is exactly what the Hydro did. Neither the Bell Telephone nor the Hydro can do the impossible and both are exceedingly well managed and should not be burdened by unjust criticism."



MAYOR HIRAM McCALLUM of Toronto who welcomed the record gathering of O.M.E.A. and A.M.E.U. delegates to the annual meetings at the Royal York Hotel.

EMPLOYER-EMPLOYEE RELATIONS SUBJECT OF CAMERON ADDRESS

By Grace J. Carter,
Hydro News

An employer-employee relationship should be built up on the basis of the duties and responsibilities of employers and employees to one another and the responsibilities of both groups to the general public.

This point was strongly emphasized by J. C. Cameron, head professor of the Department of Industrial Relations, Queen's University, when addressing the joint luncheon of the O.M.E.A.-A.M.E.U. annual meeting at the Royal York Hotel, Toronto, on March 2nd.

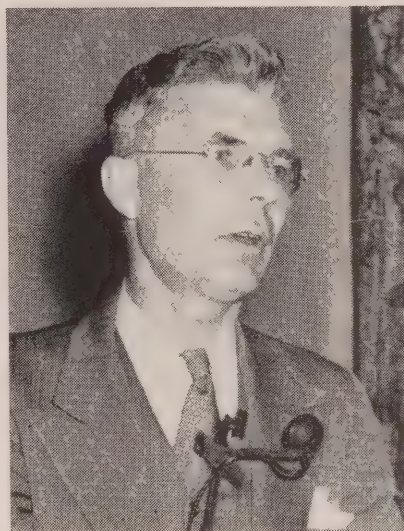
Acted As Impartial Umpire

When introducing the speaker, J. W. Peart of St. Thomas, Chairman of Industrial Relations Committee for the A.M.E.U., pointed out that Professor Cameron was born in Scotland and came to Canada in 1912. Before attending University he had worked for fourteen years as electrician, foreman, timekeeper and accountant. In 1937 he was invited by his Alma Mater to return as head of the newly established Department of Industrial Relations. Since then, Mr. Peart said, their guest had devoted all his time to labour problems, having acted on numerous occasions as chairman of conciliation boards; as impartial investigator on appeal cases for the National War Labour Board; and as impartial umpire in other labour disputes.

Human Engineering

Private business, the speaker said, had given, and was continuing to give, much attention to matters of employer-employee relations. With courage and vigour they were tackling one problem after another. Human engineering, he continued, was as important to this group as it was in a factory or a mine.

The public, Professor Cameron said, would probably continue to demand from the electrical utilities an even higher quality of service. He pointed out that machinery and equipment would help to meet that demand in part. If, however, he said, the human element were neglected, that is if the employer-employee relationship were regarded as less important than technical problems, the



Prof. J. C. Cameron

**Queen's Professor Stresses
Responsibilities One To
Another And To General
Public—Speaks At Joint
A.M.E.U.-O.M.E.A.
Luncheon**

co-operative utility enterprise would squeak, groan and splutter. Finally, short circuits would develop at all those spots which had not been insulated against low morale, poor selection and poor training.

Employer's Obligations

Professor Cameron enumerated what in his opinion were the obligations of an employer to his employee. He claimed the employer must pay fair wages—fair in the sense that they must be as high as the wages that prevail for similar classifications of workers employed on similar projects. The employer should not attempt to work his employees unreasonably long hours and he should provide good working conditions and careful supervision.

The employer, he continued, should provide as stable employment as the nature of the business would permit. He

should feel obliged to give his employees every opportunity for advancement on the basis of merit, paying at the same time some attention to length of service. He should not discriminate against employees because of race, nationality, religious or political affiliations, or membership or non-membership in a lawful labour organization. He should encourage his employees to take an interest in the business by offering rewards for constructive suggestions. He should be prepared, in co-operation with the employee group, to institute such plans for employee security as the prosperity of the business permitted.

Co-Operate With Management

On the other hand, the speaker pointed out, the employer could not fulfill his obligations to his employees unless they, on their part, recognized their obligations. He thought that an employer had a right to expect employees to demonstrate that they were interested in the business by supporting management in its efforts to render efficient service; that the employees would co-operate with one another and with management in solving day-to-day problems; that the employees would be boosters and not knockers; he had a right to expect good workmanship and careful attention to the job. The employer should expect honesty, sobriety, obedience to plant rules and orders, observation of safety practices, good house-keeping and personal cleanliness. The employer also had a right to expect them to take good care of the company property, machinery and tools.

Customer Demands Top Quality

Professor Cameron in dealing with the consumer aspect of employer-employee relations said he did not agree with the viewpoint that the customer was always right, but he knew from experience that the customer expected—even demanded—top quality at the lowest possible price commensurate with the maintenance of quality.

In conclusion the guest speaker said that some people would have you believe that satisfactory employer-employee relations rested on the foundation of a cold blooded, hard boiled, chiselling process in which employer and employee tried to steal one another's shirts. "I do not believe that," he said.

"Collective bargaining served a useful function in most plants," Professor Cameron stated. He thought it worked best, however, when the parties recognized their responsibilities to one another and to the public, and when they co-operated rather than bargained in finding the solution of all those problems in which they had a common interest.

STREET LIGHTING CONTROL SYSTEMS

**E. M. Brydon Compares
Various Types In Address
At A.M.E.U. Panel**

**By John A. Murphy,
Hydro News**

Separate feeder system of street lighting, such as used in Toronto at the present time, is too expensive and inefficient for smaller communities unless a utility already has an extensive installation.

Radio Control Unit

This view was expressed in a paper presented to the "Town" Panel of the A.M.E.U. by E. M. Brydon of Canadian Line Materials Limited during the recent Annual Meeting in Toronto. Mr. Brydon spoke on the subject "Control of Street Lighting Systems."

In his treatment of the topic the

speaker dealt with multiple street lighting circuits, the type used almost exclusively in Ontario. It was pointed out that multiple control systems may be divided into three categories: 1—Separate feeders; transformers and secondary mains; 2—Pilot wire control circuit with multiple relays; 3—Wired radio control.

The first type was satisfactory in an operational sense, but required a large investment in separate feeders, transformers and secondary mains, with consequent extra maintenance costs, stated Mr. Brydon. It was gradually being superseded by more modern systems, he added.

Slides Show Difference

Improved designs of relays, he continued, had increased the popularity of the pilot wire control since they operated at very low coil currents. A 120-volt operating coil would close the armature position on 60 volts and would not release above 65 volts. This meant that voltage regulation on the pilot or control circuit was not critical, he said.

Slides were shown to illustrate the

difference in the two basic types of pilot wire systems. The first slide described the relay in which the contacts were open when the coil and pilot wire were energized. If the pilot wire were de-energized, the lights were turned on. The second slide illustrated the type of relay in which the contacts were closed when the control circuit was energized. This latter type, said the speaker, was the more popular.

Wired radio control was developed in the past 15 years, said Mr. Brydon as he turned to the discussion of the third type of system. Its principle, he said, was based on the existing feeder and secondary system being used to transmit a 3,000 cycle signal from the substation to actuate a wired radio control unit or relay situated any place on a secondary main. This made additional circuits such as pilot or control wiring unnecessary.

Matter Of Economics

In summarizing the three systems, Mr. Brydon pointed out that, as previously stated, the Separate Feeder type could be considered too costly. As for the choice between the other two control systems, it was largely a matter of economics, he said. The problem was to balance the cost of the panel or control wiring against the cost of a portion of the wired radio transmitter in the substation.

ENTERTAINMENT FEATURE AT ANNUAL DINNER



SEVERAL CHORAL selections by the Leslie Bell Singers, shown above, drew appreciative applause from the large audience of delegates who packed the Concert Hall of the Royal York Hotel in Toronto upon the occasion of the annual O.M.E.A.—A.M.E.U. dinner

EVEN BETTER HYDRO SYSTEM NEW CHAIRMAN'S OBJECTIVE

**Robert H. (Bob) Saunders
Acclaimed At Joint Session
Of A.M.E.U. - O.M.E.A.
Delegates—"Work To-
gether In Furthering
Interests Of All Sec-
tions Of Province"**

"An even better Hydro system for both the people and industries of the Province."

With these words, highlighting a brief address, Robert H. Saunders, C.B.E., K.C., the newly-appointed Chairman of The Hydro-Electric Power Commission of Ontario, greeted the delegates to the annual meetings of the Ontario Municipal Electric Association and the Association of Municipal Electrical Utilities who had gathered in joint session in the ballroom of the Royal York Hotel, Toronto, to welcome him.

In introducing the new Hydro Chairman to the gathering of municipal Hydro representatives, J. R. Sullivan, President of the A.M.E.U., referred to his career first on the City Council and then as Mayor of Toronto. This introduction, however, seemed scarcely necessary. It was evident that most of those present knew "Bob" Saunders—the man who had made friendly contacts with so many of the mayors and Reeves of Ontario and who had kept his office at the City Hall an "open house" for them whenever they visited Toronto. The applause given when the new Chairman stepped with characteristic briskness, to the platform, was spontaneous and prolonged.

It was Mr. Saunders' maiden speech as the Commission's Chairman to a Hydro gathering, and he quickly developed his theme. That was the further development, with extension along new lines, of the team-play, co-operation and good public relations which had served Hydro so well in the past. And Hydro's new Chairman made it plain that he, himself, was going to set the example.

"It shall be my endeavour during the coming days," he told the delegates, "to convince you that we on University Avenue are trying to do a job in the interests of the people of Ontario to whom Hydro belongs. When you feel that any important matters coming before your municipal commissions and utilities should be referred to us for assistance, I hope you will feel free to drop me a line."

Referring to the friendly contacts that he had already made as Mayor of Toronto with the mayors of other cities and towns, Mr. Saunders intimated that much the same policy of "open house" he had followed at City Hall would be carried out at Hydro. That meant that the chairman or representatives of the various Hydro commissions and public utilities throughout the province were invited to drop into his office when they visited Toronto. In addition, he hoped to obtain time on the air so that he should be able to address the municipalities and the public on Hydro affairs.

Complimenting Hydro engineers and personnel on the strenuous tasks they had carried to success in the past, the Chairman sounded a rallying note for the future—"My hope," he said, "is that we shall work together in furthering the interests of all sections of Ontario. I do not know of any factor that can assist this Province more than the development of Hydro energy."

VOLTAGE REGULATION DISCUSSED BY SEELYE

Good electrical service to customers depends largely on good voltage and good voltage regulation, Howard P. Seelye, Chief Electrical Engineer of the Detroit Edison Company told delegates at the opening session of the annual meeting of the Association of Municipal Electrical Utilities in Toronto.

Discussing "System Voltages," the speaker declared that voltage was the vital element in the supply of electric service to a community and determined how adequate and satisfactory that service would be. In this connection, he pointed out that lights were dimmed, heaters were slow, and other equipment might not operate properly if the voltage were low. On the other hand, if the voltage were too high, lamps had a short life and other electrical equipment might be damaged or give unsatisfactory service.

Voltage Deviation

On any power system the voltage delivered to consumers, at various points on the system and at various times during the day, would necessarily deviate somewhat from the single normal or nominal voltage. A total range of 10 volts was quite common and 15 volts or

more was not unusual for nominal 115 volt or 120 volt service, Mr. Seelye declared.

Compensating Methods

Several methods of compensating for voltage drop were suggested by Mr. Seelye, including: holding generator voltage higher at heavy load periods than at light loads to compensate for drop in step-up transformers and in the transmission; taps in the windings of step-up and step-down transformers whereby the transformer ratio might be changed.

Taps served to bring up voltages on outlying parts of the system where they were generally low and brought down voltages at locations near generating sources the speaker continued. Step regulators and reduction regulators could be used to vary the ratio as the load changed. By such means, it was possible to compensate for transmission drop and transformer drop and also vary the voltage according to the circuit load. Capacitors were sometimes used on distribution circuits to improve voltage, but these acted as a constant boost rather than a regulator, unless switched off at low loads. Synchronous condensers were used to regulate voltage on transmission systems by varying the reactive component of the power flowing. Voltage drop in low voltage was largely dependent on wire size and could be reduced by using larger conductors, the speaker also suggested.

LAWSON HEADS EEA: NAME OTHER OFFICERS

D. C. Stewart, System Safety Superintendent of the Niagara Hudson Power Corporation, Buffalo, was the guest speaker at the annual dinner of the Electrical Employers Association of Ontario held at the Royal York Hotel, Toronto, on March 1. Mr. Stewart has had considerable experience in accident prevention in the electric utility field in the United States.

Other speakers were the Hon. Charles Daley, Minister of Labour, and Dr. D. J. Galbraith, Acting Chairman of the Workmen's Compensation Board. President P. B. Yates of St. Catharines acted as Chairman for the meeting.

Officers elected for the ensuing year are as follows: President, J. E. Lawson, Niagara Falls; Vice-President, R. J. Smith, Perth; Secretary-Treasurer and Engineer, Wills MacLachlan, Toronto; Managing Committee: C. I. Bacon, Cornwall; W. L. Bird, Fort William; P. R. Craven, New Liskeard; Dr. W. Doan, Harrietsville; R. L. Dobbin, Peterborough; R. Harrison, Toronto; A. B. Manson, Stratford; L. G. McNeice, Orillia; W. H. Munro, Ottawa; J. W. Peart, St. Thomas; A. E. Pickering, Sault Ste. Marie; H. L. Sanborn, Toronto.

ASK O.M.E.A.—A.M.E.U. COMMITTEE STUDY FINAL CYCLE CHANGE REPORT

O.M.E.A. At Annual Meeting Endorses Resolution Suggesting Committee's Views Be Submitted To Executive And Individual Commissions Before Final Action Taken—Another Resolution Calls For Re-Grouping O.M.E.A. Districts To Correspond To Commission's New Regional Districts.

After many delegates had had an opportunity of expressing their individual opinions on frequency standardization in Southern Ontario, the O.M.E.A., at the annual meeting in Toronto, endorsed a resolution asking that the committee of the A.M.E.U. and O.M.E.A. appointed to study the interim cycle change report be called upon to examine the final cycle standardization report and submit their views to the O.M.E.A. executive and individual commissions before final action is taken.

Another resolution, which was discussed at some length and carried, advocated that existing legislation be amended so that one member of the Ontario Commission be elected by the Hydro municipalities through the O.M.E.A. "for a specific period." This resolution also stated that if the Commission were increased to five members, "two of these should be elected in like manner."

Some of the delegates were not in accord with the resolution calling for the licensing of all electricians in Ontario, strong opposition being voiced by William

Stone and M. E. Dickerson of North Bay. The resolution, which was endorsed by a comfortable majority, was vigorously supported by A. G. Jennings and R. E. Law of East York.

A committee is to be appointed by the Executive Committee of the O.M.E.A. to study ways and means for the further strengthening of the Association to better meet present day Hydro problems. This action is to be taken in line with a resolution which was carried.

A resolution suggesting that the O.M.E.A. engage its own engineer, or firm of engineers, was defeated, while a motion calling for the removal of the excise tax on household electrical appliances was unanimously endorsed.

Warren P. Bolton of Windsor expressed the opinion that electrical appliances in the home were at least as necessary as furniture.

It was decided that the Commission should be asked to have its engineers work out a scheme of power rationing so far as merchants were concerned so that all might share equally in the bene-

fits to be derived from such store and window lighting as could be permitted under prevailing conditions.

Another resolution which received unanimous approval called for a re-grouping of the O.M.E.A. districts to correspond with the new regional districts created by the Commission. With this objective in view, a committee of eight, one from each O.M.E.A. district, will go to work on a plan.

It was decided to ask the Commission to amend the clause in the Code Book forbidding plug outlets in bathrooms in favour of properly installed three-point, grounded outlets for heaters and regular outlets for certain other electrical appliances.

Several questions regarding conservation of power and the conditions and rates at which "at will" power was supplied were framed in a resolution which will be sent to the Commission.

Several resolutions received approval without debate. One was a request to the Government of Ontario to protect forest and water resources so as to ensure an adequate flow to Hydro generating stations.

Another called for an amendment to the O.M.E.A. constitution to provide that the meeting of the Executive prior to the annual meeting be composed of both the current and newly-elected Executive.

The delegates endorsed votes of thanks to Hydro News, the press, the Commercial Klub and management and staff of the Royal York Hotel.

The Association will not be asked to take immediate action with regard to holding a summer convention.



NEWLY-ELECTED EXECUTIVE Committee of the O.M.E.A. held its inaugural meeting following the final session of the annual meeting in Toronto this month. This photograph shows, Back row, left to right, Frank Pownall, Mimico; W. N. Theaker, Paisley; D. P. Cliff, Dundas; Roy Pierson, Brantford Township; Kenneth A. Christie, K.C., Toronto; F. G. Lovelady, Port Arthur; W. Dixon, Arthur; Keith C. MacLeod, Stamford Township, and Harold R. Henderson, Woodstock. Front row, left to right; Loftus Reid, Toronto; J. R. Pattison, Fort William; R. M. Durnford, H.E.P.C., Past President; George F. Hutcheson, Huntsville, President; Mrs. Kathleen Kestell, Guelph, Secretary-Treasurer; A. G. Jennings, East York; Dr. W. J. Chapman, St. Catharines and C. J. Halliday, Chesley.

SAUNDERS GUEST OF HONOUR AT TORONTO HYDRO DINNER

Remember "His Wonderful Service" As Mayor Of Toronto—Receives Two Presentations—New Commission Chairman Expresses Hope He Will Be Able To Carry Out His New Duties "In Highly Efficient Manner"

By The Editor

They said some nice things about Robert H. Saunders, C.B.E., K.C., Toronto's former mayor who is now Chairman of The Hydro-Electric Power Commission of Ontario.

The sentiments they expressed were spontaneous, sincere and from the heart, and just to emphasize, in a tangible way, their "esteem, affection and admiration for Bob," they gave him a painting and an electric razor.

It all happened at a dinner tendered in Mr. Saunders' honour by the Toronto Electric Commissioners in the Royal York Hotel on Thursday, February 26, when the gathering included his former colleagues on City Council, representatives of the T.T.C., the Police Commission, Board of Education, Library Board, Harbour Commission, Provincial Govern-

ment, The Hydro-Electric Power Commission of Ontario and other public groups. In the words of Loftus H. Reid, Chairman of the Toronto Hydro-Electric System, it was "distinctly a family party." He explained that the occasion was also the second annual civic party held as "a contribution to good fellowship."

Mayor Hiram McCallum, in looking over the gathering, said that those present represented "a deluxe list of the people who are giving public service in this city."

In his address the Mayor paid high tribute to his predecessor and wished him well in his new field. He also strongly emphasized the importance of good public relations between the Hydro and the people whom it served.

At the outset of his remarks, Mr. Saunders introduced his former colleagues on Council, remarking "They are a wonderful group of men doing a wonderful job for the taxpayers of Toronto."

"My hope," the new Commission Chairman told the large gathering, "is that I shall be able to carry out my future duties in a highly efficient manner. I have no intention of telling you all about Hydro tonight for obvious reasons but, perhaps, in the future I shall have something to say. One thing I do hope is that we shall be able to let the people of this Province know that Hydro is really a

public utility owned by the people of this Province. I appreciate very much the confidence placed in me by the Premier of this Province. I do bespeak the co-operation of the members of the staff of the Hydro Commission. My hope is that I shall be able to get along with the men of the Hydro."

Hon. Leslie Blackwell, Attorney General of Ontario, in an address which sparkled with amusing reminiscences of his early association with Hydro's new Chairman, said he was happy to know that Mr. Saunders had been able to accept this new opportunity for public service. He noted the outstanding record of Toronto's former Mayor in civic life and stressed the latter's gift for public relations.

In these times, continued Mr. Blackwell, when the great Hydro-Electric enterprise was going through the greatest period of expansion in its history, when it was about to become a billion dollar enterprise, the Government of Ontario had recognized that it was necessary to have a Chairman who had the gifts of Mr. Saunders—a man who was widely known and respected by the municipal bodies of the Province. In closing Mr. Blackwell wished the new Hydro Chairman well as he embarked upon his important duties.

During the evening Mr. Saunders received two presentations. One, a beautiful painting showing a section of the Bay of Quinte area, and painted by Manly MacDonald, was presented by Bert Merson of the Toronto Hydro-Electric System. Mr. Merson smilingly expressed the hope that Mr. Saunders

(Continued on page 33)



H. J. McTAVISH, Treasurer of the Toronto Hydro, (right) is shown shaking hands with Mr. Saunders as he presented the latter with an electric razor. The group on the left are W. Ross Strike, K.C., Second Vice-Chairman, H.E.P.C.; Mayor Hiram McCallum and Loftus H. Reid, Chairman of the Toronto Hydro-Electric System.

W. ROSS STRIKE, K.C., the Commission's Second Vice-Chairman, and Robert H. Saunders, C.B.E., K.C., (right) look just a little apprehensive as Mayor Hiram McCallum smilingly swings the stick with which he was presented by the Toronto Hydro.



MAYOR HIRAM McCALLUM and Loftus H. Reid, Chairman of the Toronto Hydro-Electric System, (left) listen intently as Mr. Saunders acknowledges the rousing ovation which he received from the large gathering in attendance at the dinner given in his honour.

THIS PHOTOGRAPH (right) was secured by the Hydro News' photographer during the proceedings at the dinner tendered by Toronto Hydro in honour of "Bob" Saunders at the Royal York Hotel. The gentleman in the centre fore ground appears to be deep in thought.



A SECTION of the head table is shown in this picture (left) taken at the recent dinner where the City Council, Police Commission, Harbour Commission, Public Library Board, Ontario Government, H.E.P.C. and other groups were represented.

PRESSING ON WITH CONSTRUCTION OF HYDRO'S DES JOACHIMS PLANT

By Harry M. Blake,
Hydro News

Construction is being pushed forward vigorously at Hydro's 480,000 horsepower development at Des Joachims on the Ottawa river. The Ontario channel—one of three channels which the main dam will close—has already been dewatered, and sufficient aggregate has been assembled to ensure a good start for concreting.

Discovery of an extensive bed of aggregate on the Quebec side of the river, created by the action of retreating glaciers in the Ice Age, enabled the Commission to plan construction of a large section of the main dam and of the entire McConnell lake control dam without recourse to the material on the Ontario side. This will mean a considerable speeding-up of the work, and a conveyor system is now well under way to carry the aggregate to stock piles and thence to the concrete mixing plant which will be set up at the Quebec end of the dam.

The glacial deposit of sand and gravel is favourably located on the slope of a hill and can be fed with a minimum of labour into the conveyor system which will be supported for over a mile of its

One Of Three Channels Already Dewatered — Dis- covery Of Extensive Bed Of Aggregate On Quebec Side Speeds Up Work

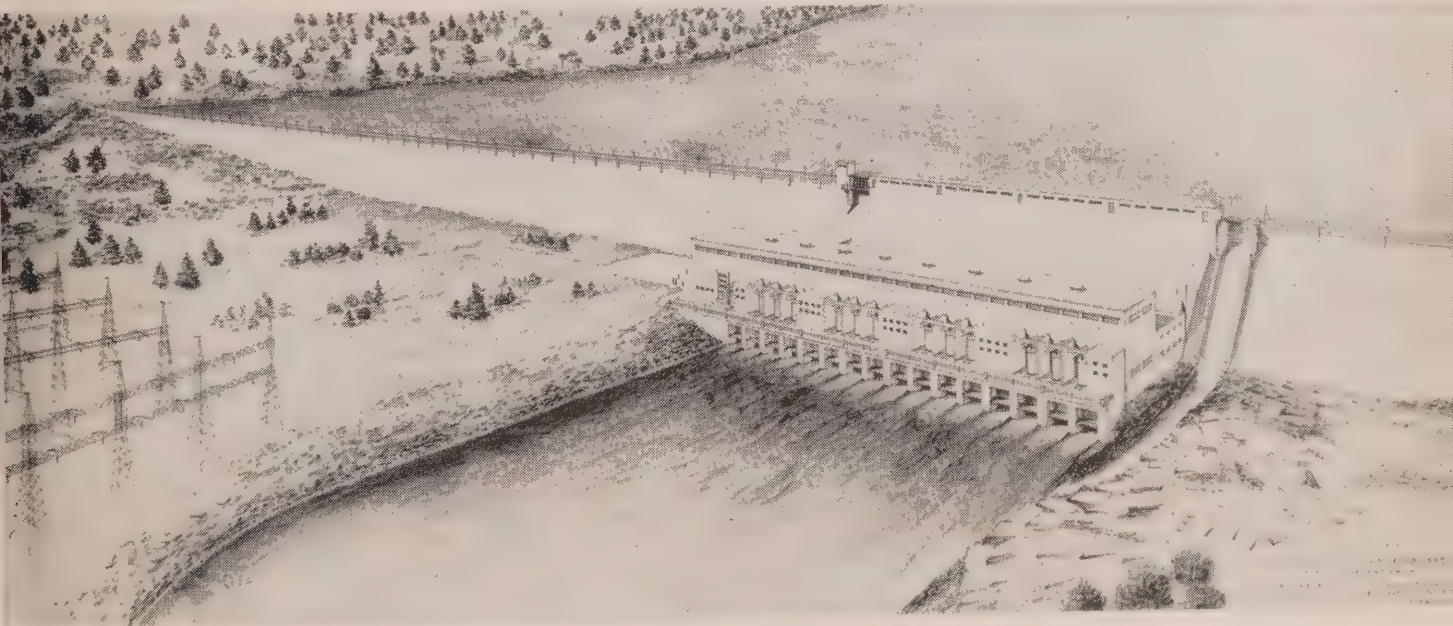
length by Bailey bridging. The material will first pass through a rock crusher and a scalping screen and thence to storage piles. The overhead conveyor for dumping the aggregate will be supported from the apex of the Bailey bridge structure. As required, the aggregate will be fed into a reclaiming tunnel conveyor at the base of the storage piles. It will then pass along an inclined conveyor to the top of the mixing plant.

Much of the Bailey bridging has already been set up, and the entire conveyor system, together with the concrete mixing plant, is expected to be in operation late in the spring. This will enable a start to be made this summer on the main dam from the Quebec side of the river. In the meantime, construction will be carried forward from the Ontario side, preceded by the necessary excavation in the river bed.

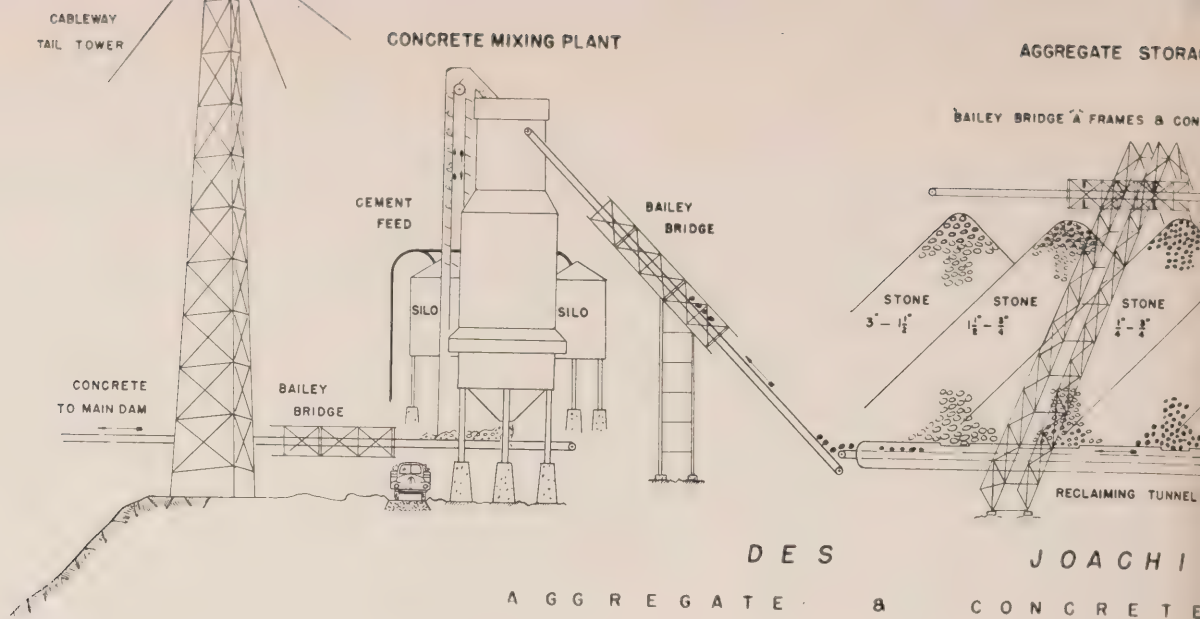
The three channels of the river which will be closed by the main dam are known as the Ontario, the Interprovincial and the Quebec channels. Nine 40-foot sluices will be provided in the Ontario section of the dam to pass the river flow when the Interprovincial and Quebec channels are dewatered. These sluices will be closed with concrete upon the completion of the dam. The powerhouse will be located centrally on the Interprovincial boundary. Island formations will permit about 50 percent of the excavation for this structure to be carried out before the Interprovincial channel is dewatered, and it is expected to complete this part of the job before the end of the year.

For the construction of the main dam, which will be approximately 2,400 feet in length, with a maximum height of about 160 feet, some 455,000 cubic yards of concrete will be required. This estimate includes the material for the headworks, which will be incorporated in the dam structure. Present schedules call for the pouring of 150,000 cubic yards of concrete this year. Total requirements for the McConnell lake control dam have been calculated at 240,000 cubic

(Continued on page 31)

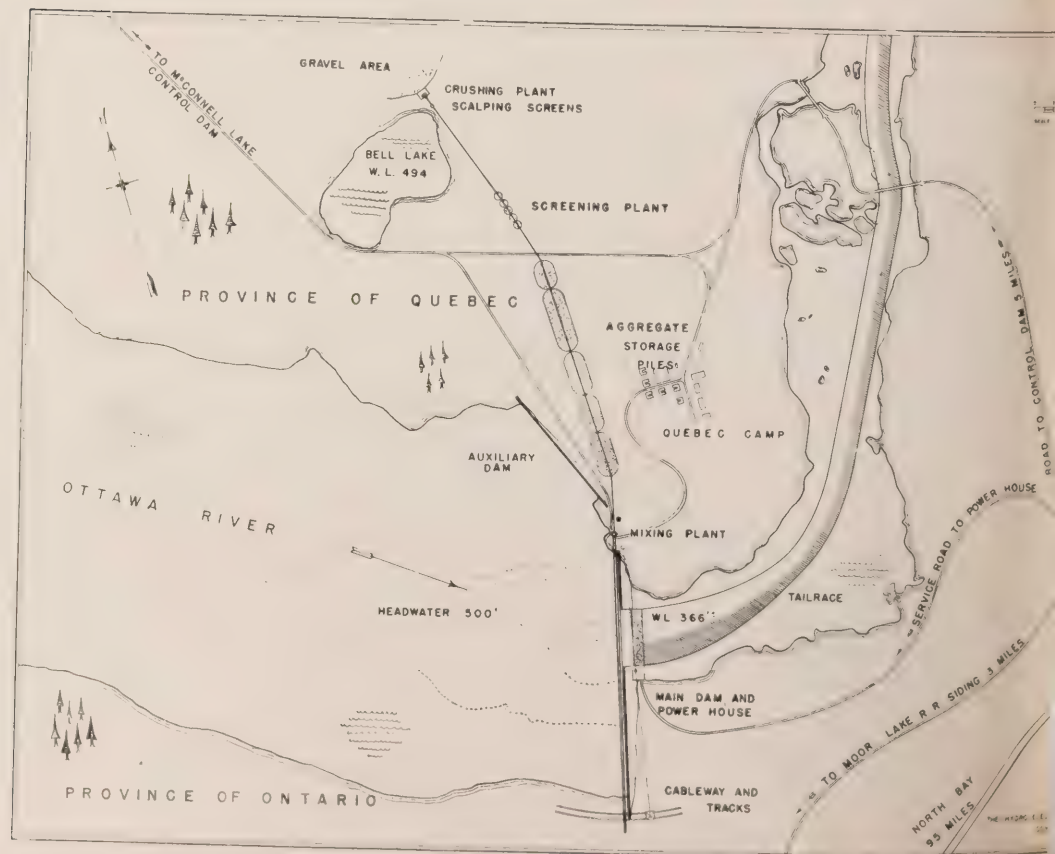


HERE IS an architect's sketch showing a preliminary conception of what the 358,000 kilowatt (480,000 hp) Des Joachims plant may look like when completed. It will be the largest of Hydro's eight new developments now under construction and will rank second only to the Queenston-Chippawa plant.

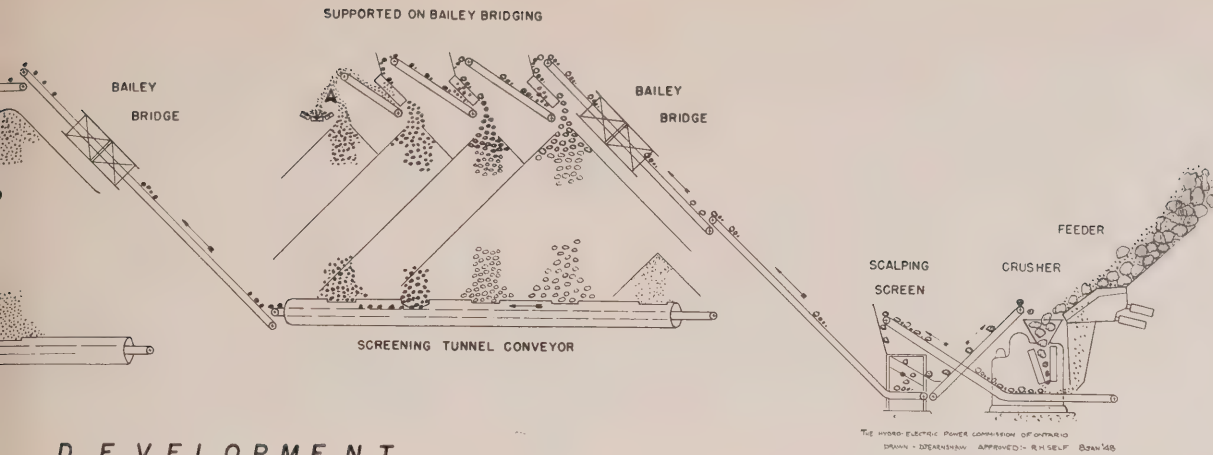


TOP PLAN shows how the aggregate for the concrete used in power house and dam construction at Hydro's 480,000 horsepower development at Des Joachims on the Ottawa river will be handled by the conveyor system now in process of erection on the Quebec side of the Ottawa river. The material comes in from the gravel pit to the Jeffery vibrating "Grissly" Feeder shown on the right and is passed through the jaw Crusher. A 30-inch belt conveyor carries it on to the Scalping Screen. Oversize stone is separated and returned for further crushing, and the remainder passed on by an inclined conveyor to the Screening Plant where the material is sorted into four sizes—large, medium, and small stone, and sand. From the Screening Tunnel the material is elevated to a horizontal overhead conveyor for distribution to the Aggregate Storage Piles. As required, the aggregate is fed from these piles into a steel pipe Reclaiming Tunnel, running through them at their bases and equipped with a conveyor, and is carried forward on an incline to the top of the concrete mixing plant . . .

THIS MAP shows the relation of the aggregate conveyor system described above to the whole power development at Des Joachims. Construction of the main dam from both the Ontario and Quebec sides of the Ottawa river will be carried forward this year.



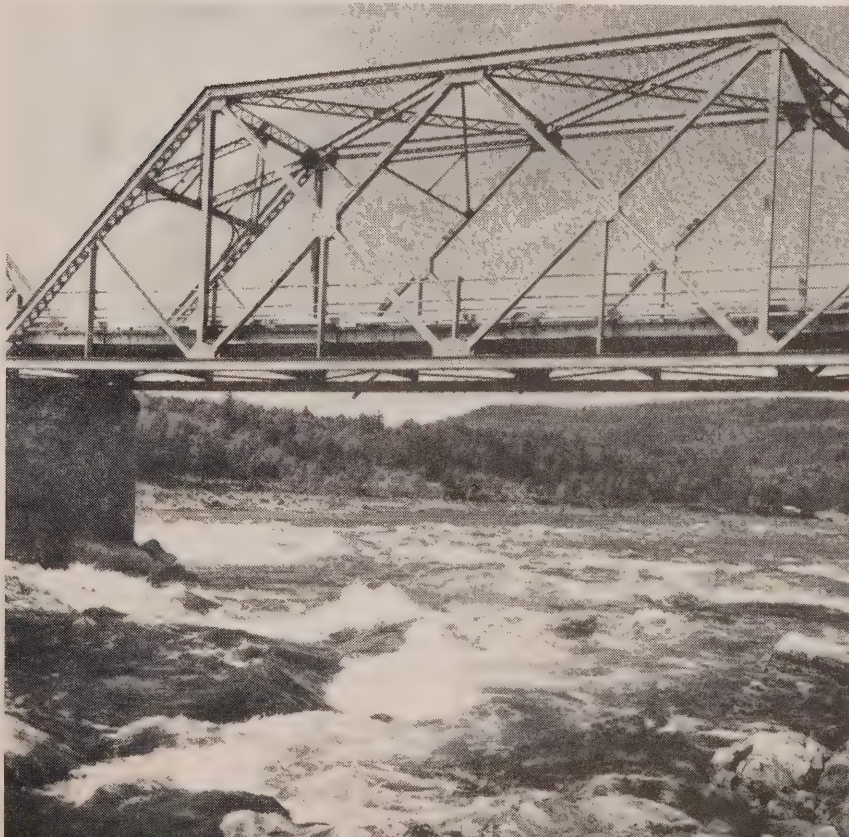
SCREENING PLANT



DEVELOPMENT.

FLOW SHEET.

AN INGENIOUS arrangement was developed by the Commission's engineers for the support of this system. It is an adaptation to Hydro needs of the famous bridging designed by Sir Donald Bailey of the British Army and used extensively in the war. As applied to Hydro's conveyor system, it involves the use of double-single "A" bents converging to form support towers. The two 30-inch concrete conveyors leading out from the mixing plant to the pouring locations on the main dam will be supported by a more orthodox pattern of double-double Bailey bridging . . . To the left of the concrete mixing plant is pictured the 159-foot tail tower for the cableway which will handle equipment and construction material. Hydro engineers have planned a novel arrangement for this structure. It will be loosely anchored so as to respond to the movements of the main 2 3/4-inch steel cable which will extend to the head tower on the Ontario side of the main dam—a distance of 2175 feet. Like the famous tower of Pisa this tower has won for itself a sobriquet. Already it is called the "rocking tower."



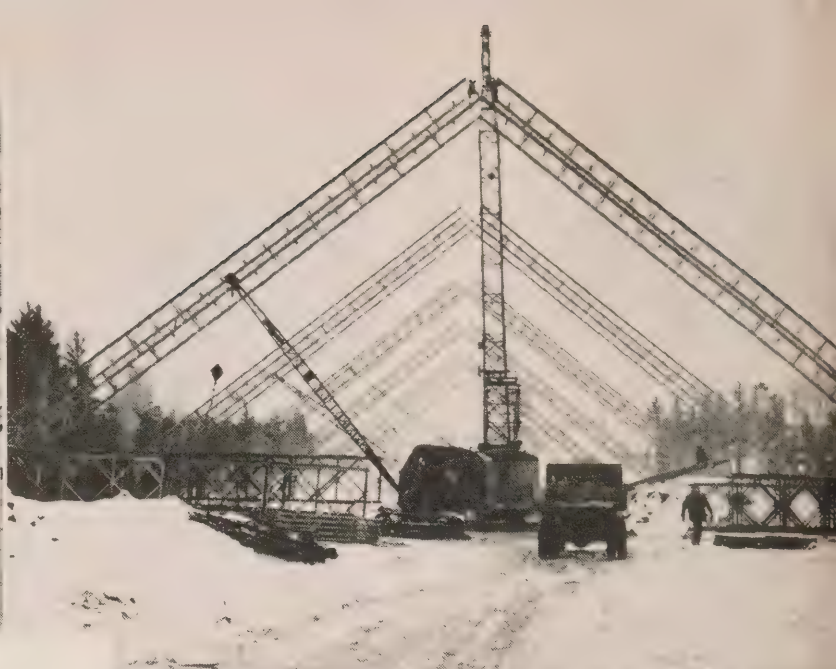
THE TAILRACE will be excavated through the Rapides des Joachims section of the river. Last spring highwater caused by phenomenal floods reached nearly to the tops of the piers supporting the bridge which was built by the Dominion Government to link the Quebec and Ontario shores.

1740 MILES

0.10
S. H. SELF
3/24/48



TOP LEFT—Looking down the snow-covered conveyor housing to No. 1 concrete mixing plant on the Ontario side of the Ottawa river at Hydro's 480,000 horsepower development at Des Joachims. The main dam will be built across the river, in an extension of the line the eye follows, for a distance of about 2,800 feet.



TOP RIGHT—Bailey Bridging is being used to provide the supports for the aggregate conveyor system on the Quebec side of the river. Its ingenious adaptation to Hydro requirements is shown as three powerful Hydro cranes engage in its erection.

LOWER RIGHT—Drilling for the tail tower footings at the east end of the main dam site. At the top of the cliff are Isak Walkama and D. C. McKeever, operating the jack hammer. In the slung platform is Harry Commandant.

LOWER LEFT—High up in this "eagle's eyrie" are (left to right) O. Blain, S. Tucci, H. Ducharme, W. Lemieux, W. J. Knight and T. Lauzon. They are moving British Columbia timber to be used for heavy duty cribbing.



BOUCHER STRESSES NEED FOR TRANSFORMER CHECK

**Addresses A.M.E.U. On
"Maintenance And Tests
For Substation Power
Transformers"**

**By John A. Murphy,
Hydro News**

The vital role played by substation power transformers in the operation of local hydro-electric systems was discussed in a paper presented to a panel of the A.M.E.U. by George E. Boucher, Superintendent of the Paris Public Utilities Commission. The panel met during the recent Annual Meeting of the A.M.E.U. at the Royal York Hotel in Toronto.

Speaking on "Maintenance and Tests for Substation Power Transformers," Mr. Boucher was emphatic in dealing with the importance of periodic checks on transformer equipment. When oil switches or protective equipment supplying the transformers failed, he said, they could be readily shunted out of service. But this was not true of a defective transformer, he said, especially in the smaller municipalities where a large reserve capacity was not usually held in readiness. This usually involved considerable inconvenience for the consumer.

By the word "maintenance," Mr. Boucher made it clear he did not mean mere observation, either casual or intense. A transformer usually had no moving parts, unless equipped with automatic tap changers, said the speaker, but it would be a fallacy to suppose for that reason no maintenance was necessary until the equipment actually became defective.

Discussing potential trouble spots, the Paris Superintendent said windings in transformers of core type construction were inclined to settle downward leaving a space between the adjustable bracing. This often resulted in the windings short-circuiting. Another source of breakdown mentioned, was the danger of oil sludge crystallizing and causing obstructions in the oil ducts. To effect maintenance of this type it was recommended that the core and winding be removed from its case. This would not be necessary in the large type transformer where ample working space was available when the oil had been removed.

The aforementioned method, Mr.

Boucher continued, was used by the H.E.P.C. in the inspection of the large power banks. It was also standard practice with the smaller units. When a transformer was moved from one district to another, the core and windings were removed and thoroughly overhauled. Next the inside of the tank was given a bath in "varsol," and all welded and riveted seams treated with oil and acid resisting compound to prevent oil leaks.

In addition to the inspection of core and windings, Mr. Boucher stressed the importance of ensuring that vertical spacers were inserted between the primary and secondary windings. These spacers

held the coils concentric, said the speaker, and it was important that they be replaced in their original positions and made secure.

In giving the transformer the dry run, particular emphasis was placed on the necessity of avoiding overheating with its attendant damage to the insulation as well as the ever-present danger of fire. The advisability of keeping a fire extinguisher on hand was also recommended.

In order for a municipality to carry out an efficient maintenance routine for transformers, Mr. Boucher concluded, it was essential to have reserve capacity available and the erection floor to maintain it. Any expenditure along this line, he told the delegates, would pay large dividends over a period of years, to say nothing of the experience from observing the conditions under which some of the older transformers had been operating.

SEES COSTS REDUCED BY PREFABRICATION

Adoption Of Factory Assembly Technique As Important To Electrical Industry As To Other Fields, Says Gordon McHenry, Addressing A.M.E.U.

Distribution substation cost can be materially reduced by prefabrication of substations.

This opinion was expressed by Gordon M. McHenry of Canadian General Electric Company, when addressing the opening session of the A.M.E.U. Annual Meeting on the subject of "Distribution Substation Design."

Prefabrication, he said, represented a trend not peculiar to the electrical industry but rather a step in keeping with a movement already in evidence in other fields.

Continuing, the speaker stated that the development of distribution facilities to keep pace with rapidly expanding loads was a problem common to nearly all electrical utilities on this continent. Not only was the load increasing, said Mr. McHenry, but its character was gradually undergoing a change. Added to this was a demand for better service on the part of the consumer. Briefly, this meant that utilities were faced with the dual task of pushing the extension of distribution systems while engineering the system to a greater extent than ever before.

In his treatment of the problem, the speaker made reference to a paper by

O. B. Falls, published in 1944 by the American Institute of Electrical Engineers and entitled "A Method of Approach to the Consideration of Power-Distribution-System Cost." This paper constituted an exhaustive study of the manner in which the overall cost of distribution may be changed by various factors. One of the considerations of this report, as outlined by Mr. McHenry, was the fact that the general effect of increasing load density was to decrease the system cost expressed in dollars per kv-a of load. It was also pointed out that as the size of the substation used in a given area was increased the number of substations was decreased. Thus the cost of substations was reduced but the cost of primary feeders was increased.

By far the most important conclusion of the report, said Mr. McHenry, was that in the case of the radial and primary network systems the lowest system investment cost was achieved if substations rated around 2,000 to 3,750 kv-a were employed. Emphasizing this point, the speaker referred to the possibility of standardization on a few ratings of substation to suit the majority of distribution problems. In this respect, it was said some misunderstanding seemed to exist over the meaning of "standardization." Actually, he stated, it was the structural components, transformer ratings, metal-enclosures and bus arrangements which were standardized. Such things as metering and relaying facilities were more flexible and might be varied widely without effecting any change in the structural design.

COMPANY HANDBOOK BEST INTRODUCTION

Training Films Also Advocated By R. L. Hart When Addressing A.M.E.U.

**By Mildred C. Redmond,
Hydro News**

One of the best introductions a new employee can receive when joining an organization is a company handbook. This handbook need not be elaborate but it should contain a short history of the company and a brief outline of the policy in relation to the employee.

This opinion was expressed by R. L. Hart of Canada Wire and Cable in his address before the annual meeting of the Accounting and Office Administration Section of the A.M.E.U. with Roy King presiding.

Taking as his subject, "Training Office Employees," Mr. Hart emphasized the fact that training should start the day an employee entered a company's service.

Mr. Hart went on to say that the usual procedure towards a new employee was to introduce him to the man whose place he would be taking and leave him to the chance that he would pick up all the necessary information. This was a very poor plan and should not be relied upon. Instead he suggested that the new employee be given a manual which would explain his new job step by step. Failing that, the supervisor should spend a considerable amount of time with him and see that the new man understood completely what he was to do. He should be shown not only his immediate work but also something of how the whole department was run and how his work would fit into the whole pattern. In this way his interest in his new job would be considerably stimulated.

Another aid to the new employee that Mr. Hart mentioned were training films. He pointed out that often office workers didn't know what went on in the plant and in reverse the plant workers didn't appreciate how much was involved in the office routine. He also suggested progress reports on the new employee made out by the supervisor.

Supervisors themselves, he said, also needed training. Much could be done in discussion groups, also with films or with courses given outside and paid for by the company. In addition to giving attention to the mechanics of training, Mr. Hart went on to say that the employee should be treated as a human

being and that a great deal could be done by a tactful and diplomatic supervisor.

The second paper at the meeting of this A.M.E.U. group was given by George Wears of Johnson & Higgins, who discussed a new type of insurance policy, known as the "Dishonesty, Destruction and Disappearance Policy," that is becoming well known among large organizations. This policy, very broad in scope, was introduced into the United States in the early 1940's and soon found its way to Canada. He said it was designed to give any client a very complete coverage, the five types of coverage being: 1. Fidelity of employees 2. Loss inside the plant 3. Loss outside the plant 4. Safety deposit boxes 5. Forgery. Mr. Wears gave examples of unusual types of money losses that had been covered by this policy and pointed out that although the unusual loss didn't happen often yet it could happen to anyone.

Mr. W. J. Keenan, F. W. Woolworth Company Limited, was the third speaker and the subject of his address was "Expense Control, a Requisite of Good Office Management." "Where there is waste," he said, "we have to pay for it." He emphasized the fact that control of expense did not mean cutting salaries and laying off employees. Work simplification was the first topic he discussed and he said, to put the matter briefly, the easy way of doing a job was usually the best and in reverse the best way was usually the easiest. He mentioned a couple of practical handbooks on short cuts in office routine and gave a number of specific examples. He pointed out that the office was really the nerve centre of any business and that it was highly important that it should be run with a maximum efficiency. Closely tied in with simplification, he said, was standardization and he described how such matters as forms and equipment in his own firm had been standardized so that there was no time lost when employees were transferred from one office to another.

As a third factor that influenced expense control Mr. Keenan next discussed working conditions. He said that since he was speaking to a group of Hydro men he wanted particularly to emphasize the importance of lighting in any office and its relationship to the efficiency of the work done. As well as lighting he said there was also the matters of colour, suitable furniture and the general layout of the office all of which could contribute to a high standard of office efficiency.

DURNFORD STRESSES LONG-RANGE VIEW IN LEAGUE'S WORK

Strong advocacy of The Electric Service League of Ontario was voiced by R. M. Durnford, President of the Ontario Municipal Electric Association, at the recent convention of the O.M.E.A. and the A.M.E.U. in Toronto. He pointed out that there had been a noticeable apathy with regard to the activities of the League since the power conservation plan had been drawn up. Deprecating this attitude, however natural it might be, he urged a renewal of the zeal which had characterized the work of the League during the first year of its existence.

"Among the leaders of the League," he said, "this is what I find to be the line of thought—that the organization should be kept intact and hard at work because it is giving protective advice to home-builders."

It was true, Mr. Durnford admitted, that present conditions of power supply might dampen the enthusiasm for the extension of domestic electrical services. People building new homes had, however, to consider the future. By following out the Red Seal programme advocated by the League and providing themselves with plenty of outlets and adequate wiring for electrical appliances, they would be acting very wisely from a long-range point of view. They would be saving themselves a good deal of trouble and expense when the time came when they could go all out in the purchase and use of these time and labour-saving appliances which added so much to the comfort of the home.

The Electric Service League of Ontario, Mr. Durnford reminded his audience, was a province-wide organization. He had been talking over the situation with its manager. The latter had emphasized the value of complete reports from all municipalities upon League activities in their areas.

SUMMARIES OF REPORTS ON FREQUENCY PROBLEM GIVEN TO DELEGATES

Copies of the summary of reports on the problem of frequency standardization in the Southern Ontario System were distributed to O.M.E.A. and A.M.E.U. delegates at the joint annual meeting in the Royal York Hotel in Toronto. An able interpretation of the reports was given at this meeting by A. H. Frampton, Deputy Assistant General Manager of The Hydro-Electric Power Commission of Ontario.

AT THE ANNUAL MEETINGS

"IT'S ALL in how you look at them," remarked the *Hydro News*' photographer as he got this group (left) in his viewfinder at the annual meetings of the O.M.E.A. and A.M.E.U. He identified C. A. Smith, H.E.P.C., Dr. J. W. Thompson, Toronto, A. E. Fort, St Marys and S. R. McBrien, Alymer.



THERE WERE times during the annual meeting when delegates put both feet forward. A shining example was set by this trio (right)—A. E. Ditchburn, Strathroy; R. J. Smith, Perth and R. H. Martindale, Sudbury.



IT IS said that J. D. Leach, (above) told a few, hair-raising stories as he sat in the barber's chair talking to F. Greenslade and J. V. Fregeau, both of Kenora.

NEXT, THE photographer spotted this trio (above) engrossed in conversation. They are, from left to right; Henry Walter, Brockville; E. G. Gurnett, H.E.P.C. and A. C. Farquharson, also of Brockville.

REGISTRATION WAS an important preliminary to the O.M.E.A.—A.M.E.U. annual meetings. Below, a group of delegates await their turn to don the convention buttons.

RECEIVING HIS registration material from Miss Shirley Rosborough, Bert Merson, T.H.E.S., is shown below in front of the registration table.



CO-OPERATION ESSENTIAL IN MEETING CHALLENGE OF TODAY'S PROBLEMS

**W. Ross Strike, K.C., And
A. W. Manby Address
District No. 7 O.M.E.A.**

**By Grace J. Carter,
Hydro News**

"Co-operation is the only answer to the serious problems facing us today," said W. Ross Strike, K.C., Second Vice-Chairman of The Hydro-Electric Power Commission of Ontario at a recent meeting of District No. 7 O.M.E.A. at London.

Speaking at the dinner following the general meeting, Mr. Strike pointed out that Hydro at the present time was facing the greatest epoch in its history, and co-operation was essential if it were to meet today's challenge as successfully as it had met others in the past. In this respect, he stated that a growing spirit of teamwork between the O.M.E.A. and A.M.E.U. has been increasingly evident at every district meeting.

The reason post-war power developments were not being completed as rapidly as those built during the war, the meeting was told, lay in the fact that wartime projects such as Polymer and Shipshaw were given top priority in the

matter of needed materials. Otherwise their construction in such a relatively short span of time could never have been accomplished. Current conditions, with priorities a thing of the past, made early delivery of the necessary equipment and material impossible. Two to three years was the manufacturers' absolute minimum for delivery, Mr. Strike stated.

The ubiquitous influence of Russia as a contributing factor to the present power problem was noted by the speaker in making reference to the unsuccessful overtures made by Hydro to electrical manufacturers in Switzerland and Sweden. These negotiations proved fruitless, said Mr. Strike, because all the firms were tied up as a result of previous commitments to Russia.

In discussing the re-allocation programme, tribute was paid by the speaker to the operating staff at Hydro for their untiring efforts to map out the most satisfactory schedule for distribution of loads. In particular, it was emphasized, great care was being exercised to avoid unequal cuts among industrial consumers and minimize losses in actual working hours.

The need for a cohesive effort in handling the situation was again stressed by Mr. Strike in concluding his remarks. A general "war of nerves" seems prevalent throughout the world, he said. The underlying factor in it all, it was

observed, was a selfish pre-occupation with one's own troubles with no consideration for the other fellow.

At the afternoon meeting, A. W. Manby, Assistant General Manager Administration, H.E.P.C., gave a brief resume of the power supply situation during the last ten years. In 1939, the delegates were told, the Hydro load stood at 1,000,000 kilowatts (1,333,330 hp). At the cessation of hostilities in 1945 the figure had increased to 1,600,000 kilowatts (2,133,330 hp), and in the past two years it has continued to increase until at present they had a load of 2,000,000 kilowatts (2,666,660 hp), (including savings due to voluntary conservation and restrictions); a 100 percent increase in less than ten years. On the other hand, Mr. Manby pointed out, it had been possible to supplement resources by only about 42 percent in the same period. This figure included the temporary aid secured from the Commission suppliers, it was emphasized. On the subject of the assistance received from the Quebec companies, said Mr. Manby, no better example could be found of co-operation between utilities.

Refuting claims of some delegates that a serious error in judgment had been made in not anticipating the existing situation, Mr. Manby stated Hydro engineers had foreseen the possibility of difficulties this winter. However, unusually light rainfall coupled with the unexpectedly heavy demand had drained the water in storage and had made the present reductions necessary.

An outline of the structure of the Regional Office was given by R. M. Laurie, Western Ontario Regional Manager, H.E.P.C. He pointed out that the

(Continued on page 27)



NEWLY ELECTED officers for District No. 7 O.M.E.A. are, from left to right, Secretary, H. F. Parker, Woodstock; Director, R. W. D. Lewis, London; President, P. R. Locke, St. Thomas; Director, H. R. Henderson, Woodstock.

TAKEN DURING the afternoon session of O.M.E.A. District No. 7 meeting held at London recently. Among those identified in this group are W. Ross Strike, K.C., Second Vice-Chairman, H.E.P.C.; M. J. McHenry, Director of Consumer Service Division, H.E.P.C.; Roy Pierson, Brantford Twp.; G. H. Fuller, Windsor; J. R. Sullivan, Woodstock; H. Allan Howard, Brantford Twp.; J. W. Pearl, St. Thomas.



A. W. MANBY, Assistant General Manager—Administration, H.E.P.C., (right) explains a few problems to W. E. Vigar, Superintendent, and A. L. Bushell, Secretary-Treasurer of the Norwich Public Utilities Commission.



SOME OF the Beachville boys, from left to right, J. K. Martin, Chairman; Alfred Hillary and C. F. Cowell. On the extreme right is D. J. McLeod, Secretary, Embro Hydro-Electric System.

DURING a lull in the proceedings the Hydro News' photographer "snapped" V. A. McKillop, London; R. M. Laurie, Regional Manager for the London region; and E. W. Curtis, London.



SOVIET COUP IN CZECHOSLOVAKIA BRANDED AS MUCH AN ACT OF WAR AS ANY FEAT OF ARMS BY NAZIS

**By John A. Murphy,
Hydro News**

Soviet Russia's recent coup d'etat in Czechoslovakia was as much an act of war as any feat of arms effected by Nazi Germany during the systematic annexation of Central Europe preceding the Second World War.

That was the solemn observation made by Wilson Woodside, nationally-known news commentator at the closing luncheon of the Annual Meeting of the O.M.E.A. and A.M.E.U. with the Electric Club of Toronto acting as hosts.

Mr. Woodside gave a forthright denunciation of Soviet tactics, touching on

their opposition to all constructive efforts of the United Nations and discussed at some length the sudden stroke that unseated the Czech government of President Benes.

The introduction of the Marshall Plan, said Mr. Woodside, had stirred the Russians to action. What had occurred in Czechoslovakia was a typical example of what might occur before very long in other countries. The first step was to seize control of the Ministry of Information and the Ministry of the Interior, thereby bringing the army and all major industry into line. This scheme was carried out in conjunction with the programme of the "action groups." The

latter comprised small "cells" carefully placed in clubs, universities and youth organizations throughout the country. When this well-drilled team went into action they encountered little resistance from the poorly-organized democratic front.

To prevent a repetition of a similar fate befalling themselves, the speaker went on, the other small nations must present a united front against Communism. In itself, the speaker said, the Marshall Plan was not sufficient for the simple reason that the Soviet would not give it the opportunity to function properly. Britain had taken cognizance of this fact to such an extent she had made a major change in her foreign policy and was now advocating an economic union of France, Belgium, Italy and Holland.

Shifting his locale briefly to the United States, Mr. Woodside observed that the forthcoming presidential election there would be one of the most significant events of a portentous year. A move was underway, backed by leading members of the Senate, he told his audience, whereby America would relinquish the veto and accept a majority vote in a new body that would replace the U.N. Assembly.

**Wilson Woodside Tells O.M.E.A.-A.M.E.U. Delegates Other
Small Nations Must Present United Front
Against Communism**



WILSON WOODSIDE (seated) was guest speaker at the O.M.E.A.-A.M.E.U. luncheon at which the Electric Club of Toronto was host. F. H. Chandler, H.E.P.C., President of the club, is shown in action.

Access to World-Wide Facilities

Should the formation of such a new group become a reality, he warned, it would be sheer folly to suppose that Russia would continue as a member of the United Nations. As to her participation up to the present, said Mr. Woodside, it was obvious that she regarded the U.N. Assembly as a World Soviet, and considered the Security Council to be an international Politburo. Russia's membership in the U.N., he went on, had been a sound bargain. For what to a world power was a trifling amount—\$2,000,000—she received access to world-wide facilities for disseminating Communist dogma to other member nations.

It was Mr. Woodside's opinion that the ever-widening gulf between democratic and totalitarian states could not ever be bridged. Since the Russian Revolution, he stated, they had been engaged in an ideological war. If they failed to win this conflict their only alternative would be to fight what General Eisenhower described as the "stupid war," the war which had no victor, only losers.

"In our future dealings with the Soviet," the speaker continued, "we must be prepared for sudden and unexpected developments. Russia will not give us the preliminary warnings that Germany did before the two previous wars. The Russian mind is not characterized by the same methodical preciseness that we expect from a Prussian. Russia believes

(Continued on next page)

BRIEF INTERLUDE OF ENTERTAINMENT AT ANNUAL DINNER



THESE TALENTED ladies depicted military precision at its best during one of their numbers presented before a large audience of O.M.E.A.—A.M.E.U. delegates at the joint annual dinner.

CO-OPERATION

(Continued from page 24)

regional offices would be small-scale duplicates of the Head Office in Toronto, with the same main divisions. The primary aim of these offices would be to provide convenient, on-the-spot service to municipalities—the kind of service which, hitherto, had been available only through the office in Toronto.

In the general session that followed, a number of delegates urged that a definite policy be established for the duration of the power conservation. The chief advocate was J. W. Peart of St. Thomas who commented: "We can't tell our people to turn the lights off one day and then say turn them on the next." It was generally agreed that such a programme was required, although the objection was voiced that it would work a financial hardship on some of the less wealthy communities which depend on the sale of power as a source of revenue.

A resolution, already endorsed by District #5 O.M.E.A., was brought before the meeting by Richard Thomson, retiring Chairman of District #5. It proposed that the O.M.E.A. as an association en-

gage an engineer or firm of engineers to guard the rights of the municipalities in the development and distribution of hydro-electric power. After some discussion the resolution was formally proposed by W. B. Curtis of Alymer and received the endorsement of District #7.

The meeting adjourned after electing the following officers for 1948: P. R. Locke, St. Thomas; R. W. D. Lewis, London and H. R. Henderson of Woodstock.

SOVIET COUP

(Continued from page 26)

time is on her side and is seemingly quite pleased with the success of her present methods as exemplified by Czechoslovakia."

Directing his remarks to possible future items on the Red agenda, Mr. Woodside suggested that Italy was the next logical step, then Greece, Turkey and Iran. However, the paramount contingency to be prevented at all costs, he emphasized, was a Russian-Controlled Germany. Such

an eventuality could place some of the great scientific minds in the world at the beck and call of the Kremlin.

The Soviet blueprint for World Communism, the convention was told, was based on the premise that capitalism would eventually collapse from weaknesses inherent within itself. To illustrate this point, the speaker cited the case of Eugene Varga, the Russian economist, who was commissioned by his bosses to compile a report on the allegedly disintegrating state of the democracies' economy. When Varga submitted an exhaustive report indicating that the capitalist nations appeared to be heading up the financial scale rather than down, he promptly lost his job.

As a concluding note to his address, Mr. Woodside reminded the meeting that their way of life was based on the greatest idea in human history—the freedom of the individual to lead a decent existence not permeated by the mistrust and fear of the police state and the ever-present threat of the concentration camp. As a final illustration Mr. Woodside told of a Russian expatriate's words when he arrived in England: "It is so good," he told a friend, "to be unafraid that I will talk in my sleep."

BELLWOOD PARK PROJECT DESCRIBED BY SPEAKER

A. L. Furrana Tells A.M.-E.U. Delegates There Is Sound Reason For Confidence That Underground Electrical Distribution System Will Prove Satisfactory

**By Boyd L. Graham,
Hydro News**

Describing the underground electrical distribution system of the Bellwood Park housing project at London, A. L. Furrana, engineer of the London Public Utilities Commission told delegates to the A.M.E.U. Annual Meeting in Toronto that "there is sound reason for confidence that the system will prove to be satisfactory and even justify its higher capital costs in lower maintenance."

Houses In Small Groups

Addressing the city group panel of the convention, Mr. Furrana made frequent use of lantern slides to present an interesting illustration of his subject.

The Bellwood Park subdivision he described as "a Housing Enterprises venture consisting of 186 units," while some of the features, contributing to the installation decided upon included: curving streets which generally divided the houses into small groups of 18 or 20 making overhead electrical distribution more difficult; the fact that construction was

entirely new and to be completed as one project; and since all the houses were built for rental, there was but one property owner. In addition, there was no existing overhead plant to be abandoned and removed. The problem of installing an underground system in a residential area had been under consideration for some time in London, but it was not until the advent of the Bellwood Park project that it was considered opportune to begin serious work on such a scheme, the speaker pointed out.

Conventional Materials Eliminated

Conventional materials for underground use, such as lead-covered cables, wiped joints, ducts and manholes, were eliminated in favour of some less expensive construction which at the same time would offer a high degree of reliability. For use on secondary lines and services, plain polyvinyl chloride-covered cable had been selected.

Accessible From Outside

Transformers were placed in vaults located near the rear of the houses where they would be easily accessible by a truck. Their size was such that each transformer would accommodate a 25 kva unit with its cut-out and a street-lighting relay. Some of the principal features were a removable top for installation of the transformer and the three steel doors designed so that all parts of the transformers were accessible from the outside. Cable covers were specially designed for this project and were made of concrete, 3 feet long and reinforced with two No. 9 wires.

The covers were 4¼ feet wide and 1½ inch diameter semi-circular groove in the bottom.

Another thermoplastic known as polyethylene, continued the speaker, was used for the primary conductor insulation while the primary circuit consisted of a No. 6 plain polyethylene insulated phase wire and a No. 6 bare neutral pulled into a two-inch fibre concrete encased conduit. Each circuit would be fed from the overhead on boundary streets. Street lighting was supplied from 100-watt open type suburban luminaires on 6-foot up-sweep brackets, mounted on concrete poles with a maximum spacing of 125 feet.

Estimated Cost About \$25,000

Final actual costs of this project were not yet available because only the secondary portion had been completed. However, the estimate was \$25,000 or approximately \$130 per house, including all transformers, primaries, secondaries and services, but excluding the street lighting. A recent comparable figure for overhead street construction was \$105 per house making the underground about 25 per cent more than the conventional overhead method.

New Service Technique

This residential underground distribution system featured new design, new construction and new materials, while a new maintenance and service technique would be developed, Mr. Furrana pointed out. The first section of this experiment had been in operation for 14 months and insulation tests indicated that there had been no deterioration in that time. Further, there have been no failures. However, the speaker cautioned, "prudence would dictate that this scheme be given the test of time before being recommended for general adoption."

SPEAKERS AT ANNUAL MEETINGS



W. P. Dobson



P. J. Croft



H. P. Seelye



G. M. McHenry

COMBINATION SYSTEM URGED: OVERHEAD AND UNDERGROUND

**Carl Schwenger of Toronto
Hydro-Electric System Ad-
dresses A.M.E.U. Annual
Meeting**

**By Boyd L. Graham,
Hydro News**

Use of overhead construction for load densities below 5,000 kva per square mile and underground construction for load densities at 20,000 kva is more economical on the basis of annual costs only, Carl Schwenger, Toronto Hydro-Electric System, told members of the A.M.E.U. during City Group discussions at the annual meeting in Toronto last month.

Mr. Schwenger, in discussing "Underground Electrical Distribution System Costs," pointed out that electrical distribution in most urban centres had been carried out by means of overhead construction. This system had proved very satisfactory and economical where the load density was low, he stated. However, with load density increasing in most communities, more and heavier conductors, also more and larger transformers had to be erected on larger poles to carry these increased loads. This had resulted in a more or less unsightly appearance on the streets.

Some municipalities had eliminated large poles and associated wires and equipment from the streets by placing this equipment in lanes or private rights-of-way at the rear of buildings. This could be done successfully only where the load density was comparatively low and the problem of trees was not encountered, the speaker declared. But where the load density was high, the heavier equipment presented a problem in carrying out maintenance work.

Placing the distribution system underground could be accomplished in several ways, Mr. Schwenger continued. This system could be placed 100 percent underground or a partial installation of the system might be made underground, eliminating from the streets the large conductors and the transformers and leaving overhead only the smaller poles and small wires of low voltage. Transformers could be placed either underground or on unimportant side streets or in lanes, if possible.

The speaker also dealt briefly with the low voltage network system of distribution, particularly in relation to the

higher load densities, pointing out that overall annual charges per kva demand on the network were lower at all load densities above approximately 8,500 per kva per square mile than for the overhead system and much lower than the conventional underground system using intermediate substations and feeders operating at primary voltage. This economy in the case of the low voltage network system was due, largely, to the elimination of the intermediate substations, also to the fact that the overall electrical losses were much less, Mr. Schwenger claimed.

Referring to the aesthetic requirements of communities which often have low load density areas, Mr. Schwenger declared that the cost of operation in these areas was increased where the change was made to the underground system. Any extra cost of operation was therefore chargeable to improved appearance of the streets, and also to some extent, to increased safety of supply and continuity of service effected by the change. In this connection, it was shown that at 10,000 kva per square mile, the extra annual charges amount to a 30 percent increase. Where the load density was expected to increase to 15,000 kva or more per square mile, the annual charges dropped to only one percent. Thus, communities in planning ahead, would be well to consider whether load densities would approach this economical condition. If however, the load density were likely to increase considerably over 10,000 kva per square mile, the low voltage network of distribution showed much greater economy. All load densities over 7,500 kva per square mile should be given consideration.

Mr. Schwenger, in concluding, urged consideration of a combination system, the overhead portion to be constructed on the basis of short inconspicuous poles to support only the small secondary wires; all other equipment, including primary wires, large conductors and transformers to be installed underground.

84 MUNICIPALITIES IN INSURANCE PLAN

Eighty-four municipalities are now included in the Municipal Hydro-Electric Pension and Insurance plan, according to the report presented at the annual meeting of the O.M.E.A. This is an increase of five since March of last year.

The Chairman of Committee, P. B. Yates, noted that 74 of the municipalities were covered under the Joint Deposit Ac-

HENSHAW DISCUSSES "CANADIAN HORIZONS"

A vivid word picture of Canada and of the people who make up its population, from Nova Scotia to British Columbia, was portrayed by Don Henshaw of MacLaren Advertising Company Limited when addressing the joint annual dinner of the O.M.E.A. and A.M.E.U. in the Royal York Hotel.

The speaker, whose subject was "Canadian Horizons," warned that the world



Don Henshaw

was divided into two great camps and that "it may be necessary for us to prove our way of life is best if that way of life is to exist."

In a world in which men were fighting a battle of ideas and ideals, Mr. Henshaw stated, Canada could not attain her true greatness unless she was willing to sell herself and be vocal in her pride.

count agreement, and 10 under a new form of agreement whereby the commissions do not contribute to the joint deposit account, but pay their own costs each month to provide the regular benefits for their employees. In all, there are now 3,432 employees contributing, of which 348 were added during the past year.

Total life insurance benefit in force was stated to be \$9,336,600, an increase of \$1,485,665 over the previous year. There were now 212 employees drawing pension, representing monthly payments aggregating \$6,930. Death claims to date totalled 360. On this account \$878,750 had been paid out.

It was reported that a brief in regard to the 1946 Amendment to the Income War Tax Act respecting the method of taxing lump sum payments from Superannuation or Pension funds had been presented to the Federal Government. Up to date the committee had not received any assurance that its recommendations would be favourably considered.



Hydro

HOME FORUM

by Edith Emma Muir

HOME ECONOMIST

*If windows must be washed and dusting done,
And woodwork wiped, and cupboards,
one by one,
Be cleared and cleansed, and carpets
beaten be,
And boards be scrubbed 'till there's no
dirt to see,
Why must these things, Sweetheart, be
done in Spring?
When crocuses are up and bluebirds
sing!*

M. C. RUSSELL.

* * *

Dusting walls should be done whether they are painted or papered, or whether they are being redecorated or not. The handy attachments of the vacuum cleaner, a wall brush or a soft cloth pinned on the broom, may be your cleaning device. Brush from top to floor.

* * *

Washing walls: Do not use a commercial alkali that is too strong (read directions), and do not rub too much. Wash a convenient space, rinse with clear water and wipe dry.

* * *

Washing varnished woodwork: Mix half a small package of baking soda with a quart of vinegar and a quart of water. Purchase a large sponge and wash woodwork with this. Go over each part with cloth wrung out of clear water, and then wipe with a dry cloth.

* * *

Washing windows is done with greater ease on a warm spring day. Choose the day, use a good cleaner or a detergent (soap substitute), and wipe with a chamois.

* * *

After you've washed curtains, hang them from a rod for a short time where they will catch a breeze. Then iron them up and down; never across. Be wary of too much pressure on the iron; lightly does it.

QUICK COFFEE CAKE

1. Cut thin crusts from all sides of an unsliced loaf of bread. Then cut into pieces two inches wide and cut again in half, lengthwise.
2. Roll each piece of bread in sweetened condensed milk, coating all sides and ends well. Drain on waxed paper a few minutes.
3. Roll in chopped walnuts. You can bake them immediately or keep in the refrigerator until tomorrow morning.
4. Place on greased baking sheet. Bake in electric oven at 350 degrees, 15 to 20 minutes, or until lightly browned. Serve hot.

This is also an easily prepared mid-night snack.

NOTE:—We have decided that the lemon sponge cake (in last issue) is better baked in ungreased muffin tins and served fresh.

Washable blinds can be more easily cleaned in the bath tub. Use a basin of sudsy water and a brush. Dip the bristles into top suds and work across the blind. Hang in place to dry with a towel on the sill to catch the drip.

* * *

A non-inflammable cleaner for upholstery is applied with a cloth after you have thoroughly whisked the chesterfield and chairs. This will remove marks and brighten the colour.

* * *

The hardwood floor that requires re-finishing is a job that can be done with rented electrical equipment. However, a transformation can be made by using an absorbent, such as vinegar or commercial cleaner, to remove old wax. Then apply a thin coat of paste wax, polish; then another very thin coat of wax and polish.

* * *

Plastic finishes are splendid to use around the border of a room where you have rugs. It is good for bedroom floors.

Mirrors have a more lasting shine when polished after washing with vinegar.

* * *

There is on the market a good scratch remover polish for dark furniture, while liquid or rubbing wax is better to use on light wood. Black marks should first be removed with turpentine or a detergent.

* * *

Clean lighting fixtures and shades. Washable shades can be plunged in suds, then in a tub of clear water and placed on a towel to drain dry. Plastic shades can be wiped clean with a soapy cloth; while glued cloth shades may be sponged with carbon tetrachloride.

* * *

To remove ink stains from wood, rub sweet spirits of nitre into the spot until the wood turns white; blot it up as it comes off. Then apply two thin coats of varnish stain.

* * *

Last, but most important, use electricity wisely. Take down the curtains and let in the daylight. Do not operate the radio if you are not listening to the programme. Turn off any lights as you leave the room to answer the door or phone.

WHY HOUSECLEAN?

*We must clean and make things new and fair,
In some small way with nature to compare,
Even though the task may fill us with despair,
Then when all things are clean and fresh and new,
And dust and dirt are vanished like the dew,
We'll enjoy the flowers and the bluebirds too.*

HUTCHESON HEADS O.M.E.A.

SUCCEEDING R. M. DURNFORD

By **Harry M. Blake,**
Hydro News

When George F. Hutcheson, Chairman of the Huntsville Public Utilities Commission, came forward to present the biggest sheaf of resolutions that had ever been presented to the O.M.E.A. at an annual meeting, he did not know that he was soon to be elected president of that Association. But R. M. Durnford's tenure of that office was drawing to a close—under the constitution presidents may hold office for only two years—and it was natural that the delegates should turn to a man, who, during the past year, had borne so much of the heat and burden of the day.

Mr. Hutcheson, who is a graduate in Engineering of the University of Toronto, was recommended for the high office by C. J. Halliday, Chairman of the Chesley Public Utilities Commission, who had worked with him on many O.M.E.A. committees. R. S. Brown, the young and energetic commissioner from North York, who was proposed for the presidency by A. G. Jennings of East York, was the first to compliment the successful candidate.

Mr. Durnford, the retiring president, was the recipient of a handsome leather travelling bag and a commodious writing desk. Mr. Durnford could only gasp: "You are much too generous, gentlemen," in making acknowledgment of the presentation and warm tributes.

Succeeding W. Ross Strike, K.C., now Second Vice-Chairman of the H.E.P.C., who as President of the O.M.E.A. for 1945 became its past-president during 1946-7, Mr. Durnford now becomes past-president of the O.M.E.A. The Honorary Vice-Presidents remain the same as in 1947. They are:—F. Biette, Chatham; C. J. Halliday, Chesley; G. S. Matthews, Peterborough; Dr. W. J. Chapman, St. Catharines; H. O. Hawke, Galt, and K. A. Christie, K.C., Toronto.

Officers elected for 1948 were as follows: Vice-Presidents: District 1, T. E. Andre, Kingston; 2, G. F. Hutcheson, Huntsville; 3, F. G. Lovelady, Port Arthur; 4, Loftus Reid, Toronto; 5, R. Pierson, Brantford Township; 6, G. W. Gordon, Kitchener; 7, P. R. Locke, St. Thomas; 8, G. H. Fuller, Windsor. District Directors: 1, M. P. Duff, Belleville, and James Halliday, Kingston; 2, W. Dixon, Arthur, and W. N. Theaker, Paisley; 3, J. R. Pattison and C. H. Moors, Fort William; 4, A. O. Leslie, Scarboro Township, and A. G. Jennings, East York; 5, D. P. Cliff, Dundas, and Keith C. MacLeod, Stamford Twp.; 6, H. O. Hawke, Galt, and F. E. Welker, St. Jacobs; 7, H. R. Henderson, Woodstock, and R. W. D. Lewis, London; 8, Charles Austin, Chatham, and W. P. Bolton, Windsor. Secretary-Treasurer, Mrs. K. Kestell, Guelph.

DES JOACHIMS

(Continued from page 17)

yards, and it is expected that concreting to the extent of 150,000 cubic yards will be carried out in 1948.

Work Concentrated

Work at Des Joachims this year will be concentrated principally upon dam construction, including the building of a side dam of the gravity type, 1,300 feet in length, north of and adjacent to the main dam. According to present plans, channel improvement between McConne'l lake and the Deep river section of the Ottawa river will be undertaken. This channel, designed to handle flood discharge, will be about a mile in length and will entail the excavation of approximately 300,000 cubic yards of material.

Construction of the powerhouse itself, the head works and the excavation of the tailrace are scheduled for 1949 and 1950. This latter job involves excavation in the Rapides des Joachims section of the river for a distance of 7,000 feet downstream from the powerhouse. The tailrace channel will be 150 feet wide and approximately 30 feet deep.



BEST WISHES for a successful tenure of office are extended to George F. Hutcheson, new president of the O.M.E.A., by R. M. Durnford who retired this year.

AROUND THE HYDRO CIRCUIT

MAYOR J. S. SMITH

JOSEPH S. SMITH, serving his first term as Mayor of Cobourg, is a real booster for the town. In addition to carrying on his civic duties he is Manager of the Chamber of Commerce, and a Director of the Ski Club which was founded 3 years ago and is operated on a non-profit basis.

Although a native of Philadelphia, Pennsylvania, Mr. Smith's great grandfather is credited with being the founder of Port Hope. Mr. Smith attended school in Victoria, British Columbia and during the First World War he served in the Infantry for four-and-a-half years.

COBOURG MANAGER



Although only on the Utilities' staff since September of last year, PERCY W. GREENE, Manager and Secretary-Treasurer of the Cobourg Public Utilities Commission, "knows his way around," having been a salesman in the district for some years.

Born at St. Boniface, Manitoba, in September, 1911, he attended Provencher Collegiate at St. Boniface; University of Manitoba and Wesley College.

Prior to taking the managerial post at Cobourg, he served with several electrical companies.

While at school Mr. Greene played hockey but now his spare time is taken up with a twelve acre farm where he has some chickens, turkeys, ducks and cattle.

COBOURG CHAIRMAN



CECIL WILSON is serving his fifth term as Chairman of the Cobourg Public Utilities Commission. Born at Peterborough in 1898, he attended school there and later at Lakefield, as well as the Dominion Business College in Toronto.

During the First World War Mr. Wilson was a dispatch rider in England and France.

While at school he took an active part in hockey. Now he is keenly interested in duck and deer hunting and fishing and claims to have the best point and duck blind on Rice Lake. He also has a deer camp not too far from the town.

O.H.E. CLUB DANCE

Second call for the Ontario Hydro Electric Club's annual dance which is to be held in the Banquet Hall of the Royal York Hotel, Toronto, on April 9!

According to the reports of the Committee it is going to be a gala affair, with favours for the ladies, novelties, entertainment during the intermission, and Percy Morgan's orchestra.

Committee in charge of affairs comprises Wilf Morris, chairman; Norma Walker, Rita Ryan, George Taylor and Roy Taylor.

GORDON PACE RETIRES

GORDON PACE of the Commission's Operating Department has retired following an outstanding record of 35 years of service with Hydro.

The occasion was marked by a presentation made by J. M. Hambly, Director of Operations, on behalf of the staff, Mr. Pace receiving an engraved wrist watch, reading lamp and mantel radio.

Widely known throughout the province, he was, at the time of his retirement, Operating Engineer for the Georgian Bay, Nipissing, Sudbury and Abitibi areas, a position he had held for many years. A native of Orillia, Mr. Pace is a graduate of the University of Toronto and a life member of the International Engineers.

J. J. P. DELANTY



JOHN JERMAH PATRICK DELANTY, Commissioner of Cobourg Public Utilities Commission, is well acquainted with municipal affairs, having served on the Commission from 1933 to 1936 as Mayor; and from 1937 to 1948 alternating as Chairman and Commissioner. He also served as Councillor from 1929 to 1931, and was Reeve in 1932.

Born and raised in Cobourg, he attended both primary and secondary schools there and later attended St. Michael's College in Toronto.

When at school Mr. Delanty played hockey and football, and he is still interested in sports, curling particularly. He also likes reading and gardening.

NEW CHAIRMAN'S FIRST MEETING

AS ROBERT H. SAUNDERS, C.B.E., K.C., the Commission's new Chairman, stepped into the Board Room in the Administration Building to conduct his first meeting, the *Hydro News*'s photographer got these pictures. Below Mr. Saunders is shown with Hon. George H. Challies, the First Vice-Chairman on his left and W. Ross Strike, K.C., Second Vice-Chairman, right. Insert shows R. L. Hearn, General Manager and Chief Engineer greeting Mr. Saunders while those looking on are Dr. Otto Holden, Assistant General Manager—Engineering, E. B. Easson, Acting Secretary, and A. W. Manby, Assistant General Manager—Administration. Portrait of the late Sir Adam Beck, "Father of Hydro," forms a background for both pictures.



TORONTO HYDRO DINNER

(continued from page 15)

would find the water shown in the picture useful as he took over his new duties.

When the second presentation—an electric razor—was made by H. J. McTavish, Treasurer of the Toronto Hydro-Electric System, a number of facetious references were made to the way in which Mr. Saunders had looked after the interests of the Toronto taxpayers while serving on the Toronto Commission. Mr. McTavish, in handing over the razor, said he hoped it would leave Mr. Saunders

as clean as he had left the Toronto Hydro Treasury. One of the highlights of the evening was an exceedingly interesting address by E. M. Ashworth, General Manager of the Toronto Hydro-Electric System who told his audience about two old by-laws which had provided the money that enabled the Toronto Electric Commissioners to start in business.

In making reference to Mr. Saunders, the speaker said that on behalf of the employees of the Toronto System he wished to express their admiration, esteem and affection for a man who had given wonderful service as Mayor of Toronto. Mr. Ashworth also expressed the

hope that Mr. Saunders would be equally successful "as Chairman of that great enterprise in which our fortunes and the fortunes of the Hydro-Electric Commission are so closely bound up."

In attendance at the event were many eminent public officials including: Controllers, David A. Balfour, Kenneth B. McKellar, John M. Innes, M.B.E. and E. C. Roelofson, Chief of Police, John Chisholm, Hon. Mr. Justice Pope, T. L. Church, M.P., Col. The Rev. Sydney Lambert, Hon. Earl Lawson, K.C., Major Fred. McBrien, W. Ross Strike, K.C., Reeve G. Tracey Manes of Leaside and many others.

INCOMING AND OUTGOING PRESIDENTS



CONGRATULATIONS TO J. E. Teckoe, Jr., of Galt, newly-elected President of the A.M.E.U., are extended by J. R. Sullivan, retiring President.

PINE PORTAGE PLANT

Located on the Nipigon River approximately 12 miles north of the present Cameron Falls plant, the new Pine Portage development will have an ultimate capacity of approximately 120,000 kilowatts (160,000 hp) with four generating units. The initial installation will comprise two generating units totalling 60,000 kilowatts (80,000 hp). At the present time some 300 men are engaged in clearing the site and constructing roads and, it is expected, that active construction of the plant itself will be started early this summer. The present schedule calls for the first unit to be in service by November 1, 1950, and the second unit by January 1, 1951. Tenders are in hand for the generators and turbines and it is anticipated that the contracts will be placed shortly. The steel tower transmission line from Pine Portage to Alexander Landing is scheduled to be in service by November 1, 1950.



LADY DELEGATES to the annual meeting of the Association of Municipal Electrical Utilities in Toronto included, left to right, Mrs. Marie Lewis, of Port Dover; Miss Islay Lambert, of Cannington, and Miss L. G. Beatty, of Port Hope.

SINCERE TRIBUTE TO HYDRO STAFF PAID BY CHALLIES

Also Acknowledges Fine Co-Operation Received From Quebec Power Companies When Speaking In Legislature

Sincere tribute to "the work of the Commission's efficient and loyal staff" was paid by Hon. George H. Challies, First Vice-Chairman of The Hydro-Electric Power Commission of Ontario, when speaking in the Ontario Legislature on March 18.

At the time, Mr. Challies was presenting a review of Hydro's tremendous programme of development involving an expenditure of approximately \$320,000,000. "This gigantic plan," he said, "was worked out, for the most part, in the offices of the Hydro Commission."

The First Vice-Chairman also expressed warm appreciation of the splendid co-operation which the Commission had received from power companies in Quebec, particularly from Hydro Quebec, from whom power is purchased. At all times he stated, these companies had assisted the Ontario Hydro by making available all power possible. "This province," Mr. Challies said, "sincerely appreciates the fine spirit which has marked this very helpful co-operation."

HYDRO AT WORK

ELECTRIC LETTER OPENER



How would you like your mail sliced today, sir; thick or thin?

Now it isn't very likely you will ever have to answer that query before being handed the morning's correspondence, but it definitely is a possibility, even if somewhat remote. The machine that performs this unique little chore is called "The Lightning Letter Opener," and according to its manufacturer it does just that—at the rate of 125 letters a minute.

The unit was not designed with a view to putting the makers of paper knives out of business, nor does it mean that lethal-looking instrument on your desk has no further purpose. The good old-fashioned manually-controlled letter knife is still probably the simplest method of opening one or two letters, and has the added virtue of looking rather impressive on a desk. The electrical letter opener is for the large concern that handles a heavy volume of incoming mail. One is in operation in the Mailing Department at the Commission's Administration Building in Toronto, where a recent survey disclosed the daily incoming mail to average more than 2,200 items a day.

In action the little gadget is simplicity itself. The letters are first sorted according to size, then fed into the opener. An adjusting lever regulates the cutters to produce the desired "thick" or "thin" incision on the envelope. In this manner the mail is sliced quite literally to the boss' taste.

It can readily be seen what a time-saver the electric letter opener can be as the mountainous stack of correspondence soon dwindles to less imposing proportions under its whirring blades.

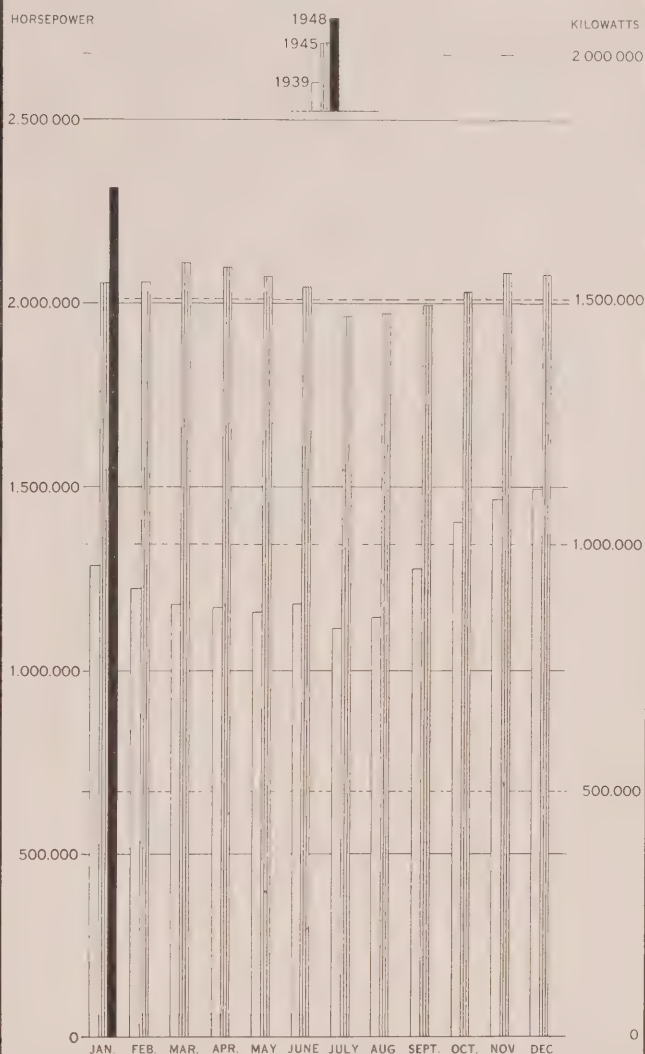
One official of the department expressed the opinion the manufacturers may have been too modest and the 125 letters a minute is an underestimate. Another feature, and an important one, is that a child could operate the machine without danger of injury. The razor-sharp cutting edges are so carefully shielded from unwary fingers that one would need a considerable amount of perverse ingenuity in order to sustain a damaged digit. The electrical letter opener is thus another example of the manner in which electricity lightens work and increases efficiency in the modern business world.

And by the way, at Hydro we slice our letters thin.

SOUTHERN ONTARIO SYSTEM

EMBRACING NIAGARA, GEORGIAN BAY AND EASTERN ONTARIO DIVISIONS

PRIMARY LOAD



POWER DEMANDS AND TOTAL GENERATION

- AREA SERVED BY	MAXIMUM 20-MINUTE PEAK KW		PER CENT INCREASE
	JANUARY, 1948	JANUARY, 1947	
PRIMARY DEMANDS - - ACTUAL LOADS PLUS CUTS			
SOUTHERN ONTARIO SYSTEM ..	1,917,441	1,790,090	+ 7.1
THUNDER BAY SYSTEM	116,825	101,600	+ 15.0
NORTHERN ONTARIO PROPERTIES	<u>191,145</u>	<u>176,309</u>	+ 8.4
TOTAL	2,225,411	2,067,999	+ 7.6
TOTAL GENERATION — INCLUDING POWER PURCHASED			
SOUTHERN ONTARIO SYSTEM ..	1,727,976	1,655,555	+ 4.4
THUNDER BAY SYSTEM	115,425	112,700	+ 2.4
NORTHERN ONTARIO PROPERTIES	<u>191,400</u>	<u>219,519</u>	- 12.8
TOTAL	2,034,801	1,987,774	+ 2.4

MUNICIPAL LOADS, DECEMBER, 1947

SOUTHERN ONTARIO SYSTEM

NIAGARA DIVISION

(25-Cycle)

	H.P.	Domes- tic Con- sumers
Acton	2,476	544
Agincourt	363	168
Ailsa Craig	197	147
Alvinston	204	205
Amherstburg	1,713	734
Ancaster Twp.	670	394
Arkona	124	117
Aurora	1,996	793
Aylmer	1,943	758
Ayr	434	227
Baden	661	168
Beachville	940	167
Beamsville	834	399
Belle River	337	314
Blenheim	1,099	560
Blyth	195	184
Bolton	363	172
Bothwell	239	185
Brampton	4,100	1,755
Brantford	29,405	8,337
Brantford Twp.	3,214	1,476
Bridgeport	336	178
Brigden	170	125
Brussels	351	256
Burford	438	235
Burgessville	98	64
Burlington	2,500	1,234
Burlington Beach	713	732
Caledonia	571	452
Campbellville	89	50
Cayuga	321	186
Chatham	10,356	4,575
Chippawa	544	364
Clifford	163	130
Clinton	1,091	593
Comber	214	120
Cottam	159	131
Courtright	85	91
Dashwood	160	102
Delaware	123	71
Delhi	1,115	609
Dorchester	186	157
Drayton	192	167
Dresden	681	466
Drumbo	154	90
Dublin	74	61
Dundas	4,274	1,458
Dunnville	2,283	1,063
Dutton	334	234
East York Twp.	16,855	11,918
Elmira	2,134	554
Elora	680	355
Embro	218	125

	H.P.	Domes- tic Con- sumers
Erieau	200	197
Erie Beach	20	79
Essex	883	528
Etobicoke	18,993	6,157
Exeter	1,131	544
Fergus	1,829	770
Fonthill	413	300
Forest	803	510
Forest Hill	10,494	3,567
Galt	15,601	4,296
Georgetown	3,121	833
Glencoe	328	230
Goderich	2,308	1,361
Granton	87	85
Grimsby	1,314	655
Guelph	15,911	5,703
Hagersville	997	406
Hamilton	193,420	43,700
Harriston	687	378
Harrow	826	350
Hensall	420	210
Hespeler	4,048	825
Highgate	149	107
Humberstone	916	738
Ingersoll	4,151	1,568
Jarvis	263	163
Kingsville	921	641
Kitchener	37,421	8,718
Lambeth	243	140
LaSalle	485	259
Leamington	3,081	1,688
Listowel	1,998	801
London	53,952	19,859
London Twp.	857	494
Long Branch	3,173	1,564
Lucan	340	186
Lynden	183	105
Markham	497	350
Merlin	198	124
Merritton	12,300	962
Milton	2,105	555
Milverton	600	263
Mimico	4,052	2,306
Mitchell	1,090	521
Moorefield	90	56
Mount Brydges	178	166
Newbury	85	70
New Hamburg	925	384
Newmarket	2,717	1,022
New Toronto	14,067	2,029
Niagara Falls	14,682	4,984
Niagara-on-the-Lake	1,076	623
North York Twp.	20,210	7,019
Norwich	647	391
Oil Springs	238	104
Otterville	202	143

	H.P.	Domes- tic Con- sumers
Palmerston	730	400
Paris	2,687	1,215
Parkhill	372	315
Petrolia	1,297	825
Plattsville	273	118
Point Edward	2,330	349
Port Colborne	2,962	1,655
Port Credit	1,602	649
Port Dalhousie	1,407	691
Port Dover	788	750
Port Rowan	173	171
Port Stanley	558	825
Preston	5,389	1,689
Princeton	2,037	98
Queenston	185	81
Richmond Hill	950	414
Ridgetown	855	599
Riverside	2,411	1,559
Rockwood	224	174
Rodney	253	239
St. Catharines	35,155	8,742
St. Clair Beach	154	102
St. George	265	154
St. Jacobs	411	141
St. Marys	2,557	1,076
St. Thomas	10,639	4,718
Sarnia	15,345	5,403
Scarborough Twp.	9,477	5,950
Seaforth	1,362	524
Smithville	563	185
Simcoe	3,846	1,678
Springfield	148	133
Stamford Twp.	4,998	7,497
Stoney Creek	555	289
Stouffville	674	408
Stratford	9,616	4,561
Strathroy	1,981	876
Streetsville	717	208
Sutton	434	468
Swansea	4,545	2,096
Tavistock	780	300
Tecumseh	677	711
Thamesford	371	147
Thamesville	400	243
Thedford	208	166
Thorndale	151	83
Thorold	3,863	1,274
Tilbury	1,150	502
Tillsonburg	2,485	1,243
Toronto	472,794	154,302
Toronto Twp.	7,150	3,065
Wallaceburg	6,894	1,387
Wardsville	101	65
Waterdown	470	280
Waterford	738	397
Waterloo	8,689	2,306
Watford	559	312

MUNICIPAL LOADS, DECEMBER, 1947

Domes- tic Con- sumers			Domes- tic Con- sumers			Domes- tic Con- sumers		
H.P.			H.P.			H.P.		
Welland	13,216	3,264	Neustadt	97	110	Iroquois	441	279
Wellesley	200	137	Orangeville	1,293	746	Kemptville	580	393
West Lorne	706	227	Owen Sound	9,343	3,563	Kingston	21,925	7,867
Weston	6,706	1,700	Paisley	263	202	Lakefield	692	360
Wheatley	393	237	Penetanguishene	1,685	773	Lanark	177	173
Windsor	64,749	26,609	Port Carling	184	211	Lancaster	82	116
Woodbridge	1,101	314	Port Elgin	670	509	Lindsay	4,715	2,289
Woodstock	10,793	3,448	Port McNicoll	178	241	Madoc	453	318
Wyoming	163	166	Port Perry	502	381	Marmora	250	249
York Twp.	32,920	21,946	Priceville	25	38	Martintown	80	56
Zurich	190	149	Ripley	195	129	Maxville	187	176
	(66 2/3 - Cycle)		Rosseau	51	58	Millbrook	208	182
Bronte	300	244	Shelburne	444	314	Morrisburg	535	444
Oakville	2,559	1,285	Southampton	686	567	Napanee	1,886	897
Trafalgar Twp.	1,093	573	Stayner	407	341	Newcastle	341	230
GEORGIAN BAY DIVISION			Sunderland	222	140	Norwood	274	242
	(60 - Cycle)		Tara	211	164	Omeme	354	173
Alliston	771	447	Teeswater	279	233	Orono	184	183
Arthur	292	199	Thornbury	176	257	Oshawa	24,355	6,765
Bala	133	336	Thornton	51	67	Ottawa	44,032	15,658
Barrie	6,571	2,471	Tottenham	203	161	Perth	2,439	1,110
Beaverton	378	331	Uxbridge	551	423	Peterborough	23,313	6,702
Beeton	181	148	Victoria Harbour	151	271	Pictou	2,062	1,336
Bradford	480	291	Walkerton	1,474	687	Port Hope	4,030	1,455
Brechin	54	53	Waubauskene	163	235	Prescott	1,625	815
Cannington	370	262	Wiarton	691	437	Renfrew	1,039	1,366
Chatsworth	166	108	Windermere	33	64	Richmond	134	85
Chesley	812	456	Wingham	1,133	560	Russell	145	119
Coldwater	232	159	Woodville	173	116	Smiths Falls	4,470	2,012
Collingwood	3,489	1,650	EASTERN ONTARIO DIVISION			Stirling	509	293
Cookstown	154	119		(60 - Cycle)		Trenton	7,080	1,833
Creemore	230	176	Alexandria	539	415	Tweed	486	321
Dundalk	333	210	Almonte	716	689	Warkworth	122	135
Durham	631	464	Apple Hill	64	66	Wellington	433	343
Elmvale	306	191	Arnprior	1,974	891	Westport	180	149
Elmwood	144	72	Athens	212	183	Whitby	2,230	1,054
Flesherton	169	126	Bath	76	64	Williamsburg	136	86
Grand Valley	219	184	Belleville	10,285	3,939	Winchester	539	309
Gravenhurst	1,939	593	Bloomfield	201	181	THUNDER BAY SYSTEM		
Hanover	2,071	850	Bobcaygeon	161	409		(60 - Cycle)	
Holstein	43	63	Bowmanville	4,460	1,234	Fort William	21,402	7,332
Huntsville	1,921	744	Braeside	321	92	Nipigon Twp.	463	243
Kincardine	1,106	741	Brighton	829	563	Port Arthur	26,898	6,099
Kirkfield	45	37	Brookville	9,384	3,101	NORTHERN ONTARIO		
Lucknow	574	287	Cardinal	467	394	PROPERTIES		
MacTier	168	128	Carleton Place	2,399	1,076	Nipissing District		
Markdale	338	231	Chesterville	502	248		(60 - Cycle)	
Meaford	1,122	757	Cobden	254	160	North Bay	7,319	3,379
Midland	5,293	1,625	Cobourg	2,851	1,443	Patricia District		
Mildmay	247	184	Colborne	396	285		(60 - Cycle)	
Mount Forest	860	502	Deseronto	386	395	Sioux Lookout	550	512
			Finch	154	107	Sudbury District		
			Frankford	287	262		(60 - Cycle)	
			Hastings	208	238	Capreol	713	344
			Havelock	308	295	Sudbury	14,317	8,734

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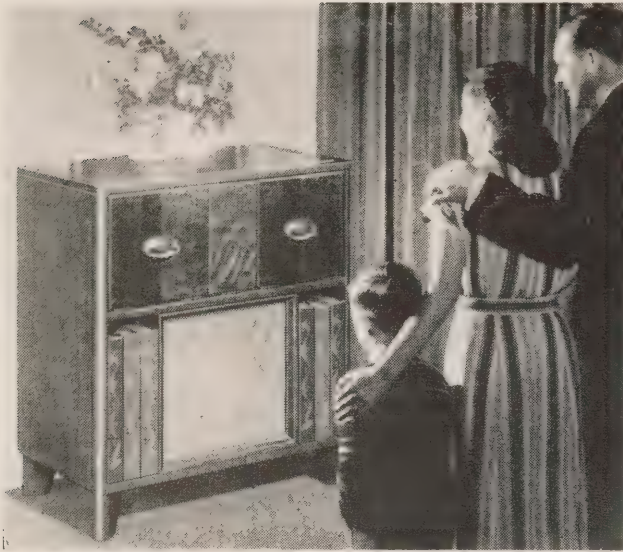
W. J. Mac

HYDRO

News

GANTRY CRANE

HYDRO AT WORK



ELECTRONIC REPRODUCER

Electricity has been and is, in a very literal sense, playing an all-important role in making it possible for people to enjoy the world's best music in their own homes through the medium of radio and record players. In this connection there has been another development which has made possible a new and wider range of tonal quality in the field of record playing. This development is the result of two decades of continuous research and takes the form of the electronic reproducer which is reported to be entirely new in principle and which, according to engineers, assures a faithful reproduction of every note.

This reproducer is said to be equipped with a sapphire stylus, precision ground with a broad tip. It is pointed out that because this stylus rides the sides of the record grooves rather than the bottom, only recorded vibrations are picked up. Background or surface noises are virtually eliminated—even a crack scarcely registers, it is claimed.

When the music recorded in the record grooves vibrates the stylus from side to side, currents are set up in the magnetic poles on each side, and the stylus is so mounted that it is insensitive to vertical vibration and practically all surface noise is automatically eliminated. The result is that pure tone is reproduced, just as it was originally recorded in the studio.

Incorporated in some of the combination radio-phonographs manufactured in Ontario, the electronic reproducer is said to be so sensitive that it is a comparatively simple matter to identify individual instruments in a full symphony orchestra.

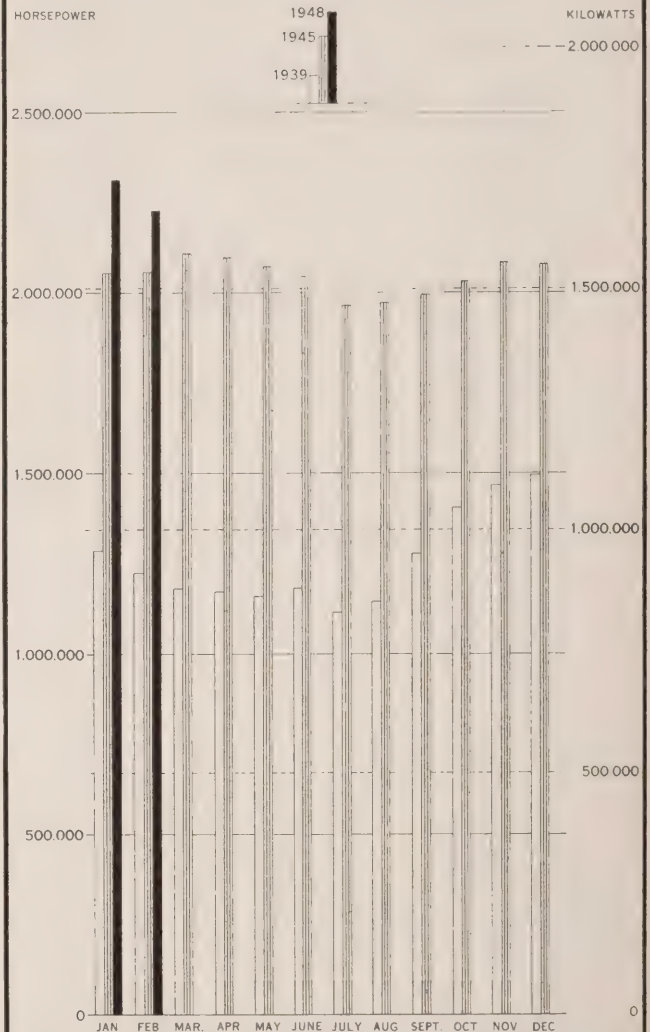
Without electricity, however, these and countless other pleasures and conveniences could not be enjoyed by the public.

The foregoing information on the electronic reproducer is not "off the record." On the contrary, we received the information from an engineer who is with a large electrical manufacturing company and the necessary permission to use it.

And now all music lovers among our readers will want to get "into the groove" with that stylus!

SOUTHERN ONTARIO SYSTEM EMBRACING NIAGARA, GEORGIAN BAY AND EASTERN ONTARIO DIVISIONS

PRIMARY LOAD



POWER DEMANDS AND TOTAL GENERATION

AREA SERVED BY	MAXIMUM 20-MINUTE PEAK KW		PER CENT INCREASE
	FEBRUARY, 1948	FEBRUARY, 1947	
<hr/>			
PRIMARY DEMANDS		ACTUAL LOADS PLUS CUTS	
SOUTHERN ONTARIO SYSTEM	1,807,414	1,764,975	+ 2.4
THUNDER BAY SYSTEM	116,326	100,600	+ 15.6
NORTHERN ONTARIO PROPERTIES	<u>168,436</u>	<u>180,507</u>	- 6.7
TOTAL	2,092,176	2,046,082	+ 2.3
<hr/>			
TOTAL GENERATION — INCLUDING POWER PURCHASED			
SOUTHERN ONTARIO SYSTEM	1,664,404	1,673,600	- 0.5
THUNDER BAY SYSTEM	113,326	111,000	+ 2.1
NORTHERN ONTARIO PROPERTIES	<u>168,086</u>	<u>221,717</u>	- 24.2
TOTAL	1,945,816	2,006,317	- 3.0



THE HYDRO - ELECTRIC POWER COMMISSION OF ONTARIO

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THE FRONT COVER



LIFTING 16,000 pounds of massive steel is no trick at all for the Gantry Crane depicted on this month's front cover. Installed over the four synchronous condensers at Hydro's Leaside Transformer Station, the crane has a capacity of eighty tons and is invaluable in the handling and maintenance of the ponderous equipment. The cover shot was taken by Hydro News' photographer Burt Helling as workmen were removing the one of the eight-ton field coils from Number One Condenser which recently received its first major overhaul in eleven years.

Volume 35

April-May, 1948

Numbers 4 and 5

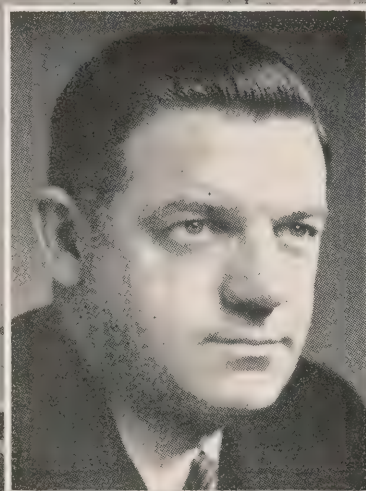
CONTENTS

	Page
Hydro At Work - - -	Inside Front Cover
Monthly Load Summary - -	Inside Front Cover
Meet The Man In The Chairman's Office - -	2
Page Three - - - - -	3
Hydro Keeps 'Em Rolling - - - -	4
Leaside Staff Hosts to A.I.E.E. - - -	8
Wallaceburg - - - - -	10
Dr. R. W. I. Urquhart's Page - - - -	13
Aguasabon Taking Shape - - - -	14
Lighting and Learning - - - -	18
Hydro Construction Men Meet - - - -	20
Construction Department Dinner - - -	22
Around The Hydro Circuit - - - -	25
"Old Number One" Gets Vacation - - -	26
Hydro Home Forum - - - -	29
Lighter Lines - - - - -	33



Meet the Man in the

OFFICE
OF THE
CHAIRMAN



Robert H. (Bob) Saunders, C.B.E., K.C., is "Dynamic, Colourful And Versatile"—He Has A Keen Sense Of Humour, Can Cook And Put Any Woman To Shame When It Comes To Curiosity — Sees Hydro As Greatest Economic Factor In Future Development Of Ontario And Canada

(Inset Photo of Mr. Saunders by Karsh)

interesting chat for he is the type of man newspapermen like to interview. Not only has the new Chairman a keen news sense but he has an appreciation of what is meant by "human interest."

Our predominant impression of the new Chairman? That is a tough question to answer.

Some would describe him as "colourful." Others would say that he is "dynamic." Both groups would be right. Then there are those who would emphasize his very keen sense of humour, the friendly, down-to-earth tone of his deep voice and the puckish twinkle in his blue eyes.

But there are other impressions that one forms while talking to Mr. Saunders. When it comes to curiosity he would put any woman to shame! He impresses one as being the type of man who will keep asking questions until he gets all the answers. This characteristic, of course, might be attributed to his legal training and experience. One is conscious also that he possesses extraordinary powers of concentration and determination and that by virtue of both word and deed he can take his place in the forefront among the guardians of those principles which are associated with a truly democratic way of life. As you study the man, "Bob" Saunders, you feel that he would be popular even with his enemies (it is difficult to imagine that he has any) for he gives you the very strong impression that while he could hit hard and put every ounce of his 195 pounds behind it, he would never hit "below the belt."

A "Dual" Personality

The new Chairman seems to possess something which might be described as a dual personality. You can readily visualize him rising in court to his full 5' 8½" and, in the traditional black silk of King's Counsel, conducting a case with the convincing and impressive dignity one associates with the initials K.C., an honour which was conferred on Mr. Saunders in 1944.

He also received another honour, in the year 1946, when the name of Robert H. Saunders, K.C., appeared in the King's Birthday Honour List with C.B.E. after it in recognition of services rendered

(Continued on page 30)

By the Editor

That colloquial question "what's cooking?" is one which might be taken quite literally by Robert Hood Saunders, C.B.E., K.C.

Cooking happens to be an art in which the new Commission Chairman has more than a passing interest and one at which he can, himself, display a skill that will win an approving nod from any sister of the skillet.

While this particular talent along culinary lines may not have vitally affected Mr. Saunders' career as newsboy, law student, criminal lawyer, Alderman and now Chairman of the Commission, it does indicate one of his very striking characteristics—versatility.

Hydro News received the official biographical record of the new Chairman—a record which tabulates all the salient facts from that important day, May 30,

1903, when he was born down to January 1 of this year when he was returned for a fourth consecutive term as Mayor of Toronto with a record vote of 122,927. While this record provides interesting and essential data, Hydro News was even more interested in forming first-hand impressions of "Bob" Saunders, the man, and of these human qualities which are fundamentally associated with his noteworthy career in public life to date. Therefore, we made the necessary overtures for an interview through the new Chairman's very efficient—and very charming—secretary, Miss Joyce Marsden.

The appointment was made and we proceeded to the 15th floor to find the Chairman in the office formerly occupied by the Secretary of the Commission.

"Colourful" And "Dynamic"

A friendly welcome from Mr. Saunders put us right at ease. It was a pleasant and

SHOWING THE WAY

All indications point to the fact that the Thunder Bay district has embarked upon a new and important era of progress and prosperity.

Focal points in this development are the twin cities of Fort William and Port Arthur which are strategically located at the head of the Great Lakes and served by two trans-continental railway systems. For many years they have been the principal entrepôts for the Canadian grain trade, and the vastness of this business is indicated by the presence of approximately 25 Government licensed elevators on their extensive waterfronts, with a combined storage capacity of close to 80,000,000 bushels.

Over the years many other industries have established themselves at Lakehead, while pulp and paper mills and mining enterprises have become increasingly active throughout the long sweep of hinterland from Dryden to Heron Bay. Dairy farming has also been carried on to a surprising extent while fur farming has become a highly developed and flourishing industry.

In many instances these industries are entirely dependent upon Hydro power. In all cases they are tremendously stimulated by electrical service. Up to the present Hydro power has been supplied to the district by the Cameron Falls and Alexander generating stations on the Nipigon river. These have a combined capacity of 108,000 kilowatts, or approximately 145,000 horsepower. The Commission is now well advanced with the construction of a 40,000 kilowatt (53,000 horsepower) development on the Aguasabon river near Schreiber and is beginning another development at Pine Portage on the Nipigon river which will have an initial capacity of 60,000 kilowatts (80,000 horsepower) and an installable generating capacity of 120,000 kilowatts (160,000 horsepower). In 1950 it is expected that power supply resources in the Thunder Bay district will be represented by a generating capacity of 208,000 kilowatts or 278,820 horsepower.

The energetic and progressive City councils and Chambers of Commerce of Fort William and Port Arthur have recognized that co-ordination of effort can assure realization of the greatest possible benefit from the present accelerating development which will receive still greater impetus with the availability of more power. Without disturbing the autonomy that is always guarded with particular jealousy by long isolated com-

munities, they have been wise and courageous enough to assume the leadership in promoting that all-round co-operation which the times call for; and, in this connection, they are setting a laudable example in re-organizing many of their public services along lines that will ensure mutual benefits to both cities.

In the next issue Hydro News will feature a special article by Harry M. Blake who records first-hand impressions of the expansion now underway in this important part of Ontario.

A NOTEWORTHY RECORD

It is of more than passing significance to note that the Commission's Construction Department has just completed its 17th Annual Convention and that this was the 13th gathering over which David Forgan, Director of Construction, presided.

This event, which features a concentrated series of business sessions followed by a dinner at which key Commission personnel are present, brings together members of Hydro's construction family from all parts of Ontario.

Over the years these conferences have become established as a yearly "get-together" which is important for a number of reasons. First, it is an occasion on which construction personnel are afforded an opportunity of learning at first hand how the all-important undertakings upon which they are engaged are related to the activities of other departments of the Commission.

In the second place, the Chairman and members of the Commission as well as top-ranking engineers and personnel of many departments, who attend the dinner, have the opportunity of meeting Hydro's "front line" men who actually build the dams, power plants and substations and erect the transmission and distribution lines.

Third, it is an occasion on which construction men not only discuss common problems but one on which they have the opportunity of renewing "auld acquaintance".

It is inevitable that, as a result of the contacts they make and the information they receive at these gatherings, the construction men are better equipped to serve as "front line" ambassadors for Hydro.

The present reorganization of Commission personnel into a more closely integrated team to meet the tremendous challenge of today's conditions accentuates the important contribution which such events can make to the efficient, overall operation of Hydro in Ontario.



By HARRY M. BLAKE,

Hydro News

Established at Hamilton in 1912 as a foundry only, Dominion Foundries and Steel Limited, before the last world war had greatly extended the sphere of its activities. Already it was making hot rolled steel plate, cold rolled steel sheets and tinplate. During the war, under the energetic guidance of its founder, C. W. Sherman, now the chairman of its board, its facilities were vastly increased both in foundry and mill. Today, furnished with the most modern type of electrical equipment for the jobs in which it specializes, it is following up an impressive "Victory" effort with a production, which, both in quantity and quality, entitles it to be ranked among the leading industries of the Dominion.

Some idea of the expansion of this industry and of the increased demands for its products since the war can be gained by a survey of Hydro power loads.

At the beginning, when it was engaged in merely "casting" operations, a load of only 1,000 horsepower was required for all its activities. In 1939 the load demand had risen to 17,000 horsepower. In 1945 the tremendous increase in production due to wartime requirements called for a load of approximately 55,000 horsepower. The return to peacetime production, with the heavy back-log it entailed, necessitated a demand for even bigger loads, and in 1947 the figures rose to more than 60,000 horsepower.

Power is supplied to Dominion Foundries and Steel Limited through the Commission's Gage Avenue sub-station in the east end of Hamilton. Ontario Hydro directly furnishes the loads for the elec-

tric furnace and the foundry operations, while the mill load proper is supplied on behalf of the Hamilton Hydro-Electric Commission. Power comes into the plant at 13,200 volts and is stepped down by the company's own transformers to a distribution voltage of 2,200 volts. Much of the power used is direct current and facilities for conversion are at present entirely provided by motor generator sets. Always a leader in providing up-to-date electrical equipment, Dofasco has, however, on order a rectifier of the improved "Ignitron" type, which, with a rating of about 500 kilowatts, will be used to supply direct current to the mill. The advantages of this mercury vapour conversion equipment over motor generator sets are said to be that they are less expensive to operate, do away with the need of rotating machinery and save power. It is understood that the company is also contemplating a smaller "Ignitron" unit to furnish the direct current required in its tin-plate processing.

War Time Production

Much of the electrical equipment now in use at Dofasco's plant was installed during the war. One of the first demands upon it was for gun forgings. In order to ensure the closest controls, the steel for these had first to be "melted" in an electric furnace, and, after forging, again heat treated by electricity. To enable it to meet the production quotas assigned to it, the company had also to install an additional mill for the rolling of ship plate, armour-plate and bullet-proof steel. This company turned out all the armour plate and all the castings for 1,488 Valentine tanks and made bullet-proof steel for the universal carriers and other vehicles

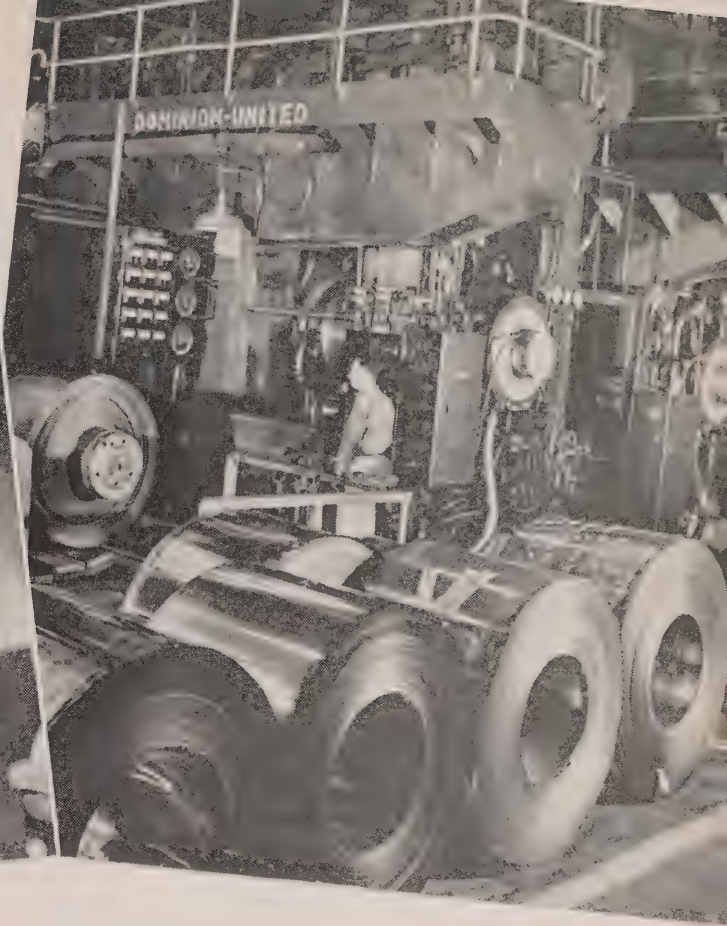
used by the Canadian armed forces. There was also a tremendous production of sheet steel for wartime purposes, while large quantities of tin-plate were turned out and sent on to the factories to be made up into food containers and mess kits for the troops. The casings for many of the smoke bombs used for signal, camouflage and mopping-up purposes were cast in the company's foundries.

Electric Furnace

In the fabrication of its steel, Dominion Foundries and Steel Limited uses immense quantities of both pig iron and scrap, and employs its electric furnace for special "melts."

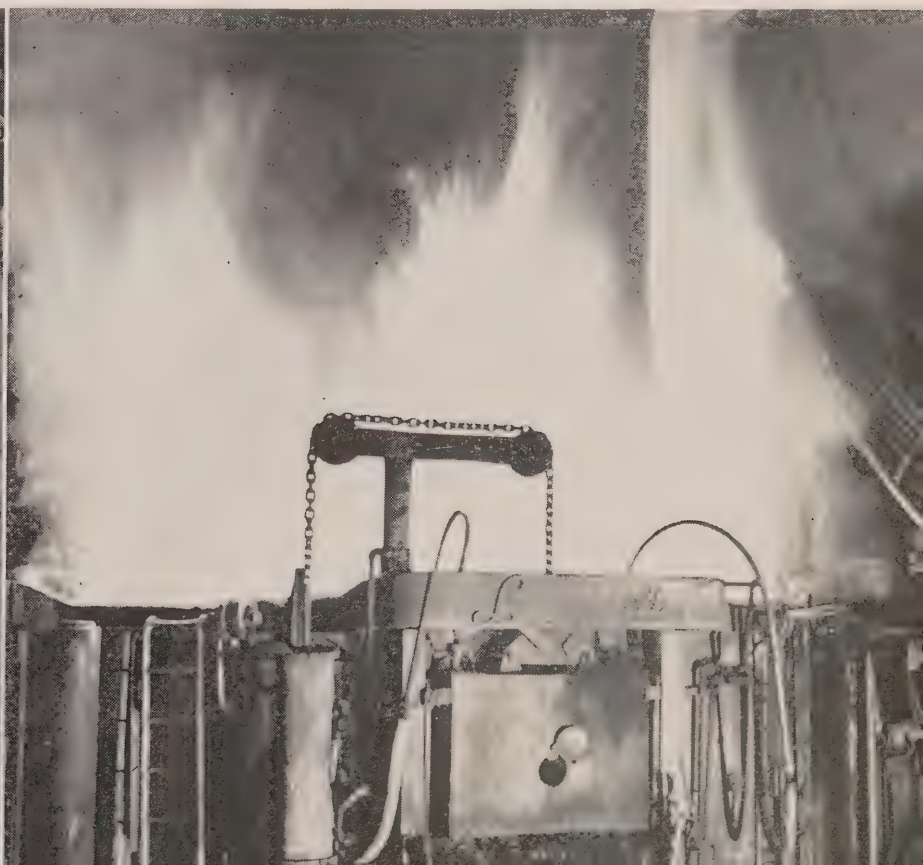
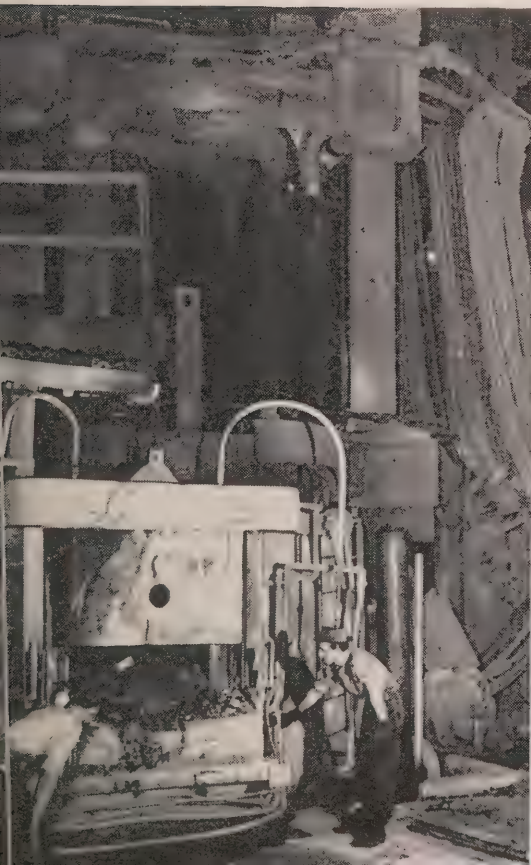
During a tour of the plant kindly arranged by A. G. Wright, the company's senior vice-president and secretary-treasurer, Hydro News saw this furnace in operation. After charging, the load is contacted by three electrodes which engage it with a 250-volt heating current of 23,000 amperes. The movement of these electrodes as they descend upon the load and afterwards, as the furnace is tilted for pouring, is anticipated by providing ample slack in the cables which carry the current from the copper bar connected with the transformers. The cables are in three groups—one for each electrode. There are 35 cables in each group and each individual cable is 1½ inches in diameter. If a cable were cut open—after the power had been turned off, of course—it would be found to contain a vast number of strands of copper wire, with a core of some heat-resistant material such as asbestos. This arrangement, as well as the large number of cables employed, enables the very high amperage

(Continued on page 6)



TOP (LEFT)—Molten steel is being poured into ingot moulds by a mammoth ladle suspended from a crane. TOP (RIGHT)—Coiling steel sheet.

BOTTOM (LEFT)—An electric furnace has just been charged. BOTTOM (RIGHT)—Flames shoot high as the electrodes contact the load.



KEEPS 'EM ROLLING

(Continued from page 4)

required for heating purposes to be carried to the electrodes without voltage losses or other impairment. The operation of this electric furnace calls for power loads up to 18,000 or 20,000 horsepower.

In its hot rolling mills the company follows the standard modern practices which have been described in some detail in previous articles on Ontario's vital industries appearing in *Hydro News*. Hundreds of electric motors are employed to operate the complicated mill machinery.

"Electric Eyes"

It is interesting to note, however, that, in order to meet the increasing demands of peacetime production, Dofasco has found it necessary to install additional equipment for the cold rolling of steel sheet. The 36-inch cold reducing mill is powered by a 1,250 horsepower motor. Two-stand temper mills increase the hardness and durability of very thin cold rolled steel sheet by pressure and tension, without disturbing the gauges which run between 0.0059 and 0.062 inches. In the shearing of sheet steel—which is done at an amazing speed—an ingenious arrangement of "electric eyes" is employed. One section of this truly magical equipment regulates the "flow" of the sheet into the shears, maintaining a constant tension. A second "eye" guards against sheets, defective through pin-holes, etc., reaching the end of the line. In addition, an electrically-operated flying-micrometer gauges each sheet as it swiftly passes along, discarding all off-gauge material.

These operations provide just another convincing illustration of the accelerations, controls and economies effected by the use of electricity in industry.

Continuous Annealing

Featuring the company's more recent installations is the set-up for the continuous electrical annealing of cold roll strip steel. *Hydro News* was led to understand that this "plant within a plant" is unique in Canada and one of only two in the world.

The annealing furnace with its annealing containers, recuperation and cooling pits, is built in stages, reaching almost to the roof of the building in which it is installed. You cannot see inside it. Indeed, you dare not see inside it, since it is a kind of Pandora's box which conceivably might spread destruction to everybody in the immediate neighbourhood if it were opened up. The reason for this is that large quantities of "burnt" gas are circulated inside to provide the necessary at-

mosphere to prevent oxidization as the annealing processes are carried out. These annealing processes, as well as the preliminary cleaning and coiling of the steel strip before it passes through the furnace and its cutting and recoiling as it passes out in a hardened and more durable form, are all electrically controlled and are said to reduce the time cycle for annealing from about 72 hours under the older methods to 3 minutes—from an acceleration point of view one of the most astounding achievements of electricity in all industry.

A heating load of 2,000 kva is provided for the different stages of annealing by 13 transformers. Primary power is furnished by a motor generator set consisting of one alternating current motor and five direct current generators on one base. For the various operations 19 individual motors are required.

Tin-Plate Production

Dominion Foundries and Steel Limited, *Hydro News* was informed, at the present time supplies 50 percent or better of all the tin-plate used in Canada. Normally the company obtains its tin from Malaya, although, during the war, with this source of supply closed off, large supplies of the metal were secured from the Belgian Congo. Malaya tin is found in the alluvial deposits of rivers and is mined by dredging operations. It is refined where it is found—in the Straits Settlements—and shipped to Canadian seaports and on to Hamilton in 100-pound ingots.

Tin-plate is made by passing steel sheet through a bath of molten tin. In operation, the "tin house" with its cleaning and rinsing tanks and steaming rollers, has something of the appearance of a laundry, and a touch of the flour mill is added by the whitish dust generated by the materials used in scouring. After being thoroughly cleaned, the steel sheets are passed through a bath of hot palm oil which gives the surface a more adherent quality for the next process—a quick pass through molten tin. (A point of interest is that "tin-plate" is, in reality, steel sheets lightly but thoroughly coated with pure tin.) Finally the tin-plate is packed in 100-pound boxes for shipment. Present production at the plant is about 2,000,000 base boxes a year.

Electrolytic Process

Hydro power, of course, supplies the drive for the machinery and controls in the tinning department and it seems likely that it will soon be called upon to do the actual plating as well. *Hydro News* was informed that successful electrolytic processes had been developed and that Dominion Foundries and Steel Limited is now erecting a unit to carry them out, and expects to have it in oper-

ation before very long. This, it is said, will be the first equipment of its kind to be used by a Canadian steel company.

It was explained that when electrolytic methods are used in tin-plating the steel sheets are introduced into the electrolyte from a coil 6,000 feet in length, or longer. There is a continuous flow, with the steel uncoiling at one end and the finished tin-plate coiling at the other. But the speed in production gained by a continuous run is not the only advantage. Under present methods, to make a good job of plating, the minimum amount of tin required per base box is 1¼ pounds. With the electrolytic process, a satisfactory coating can be applied which requires only ½ pound of tin per base box.

Hydro In The Foundry

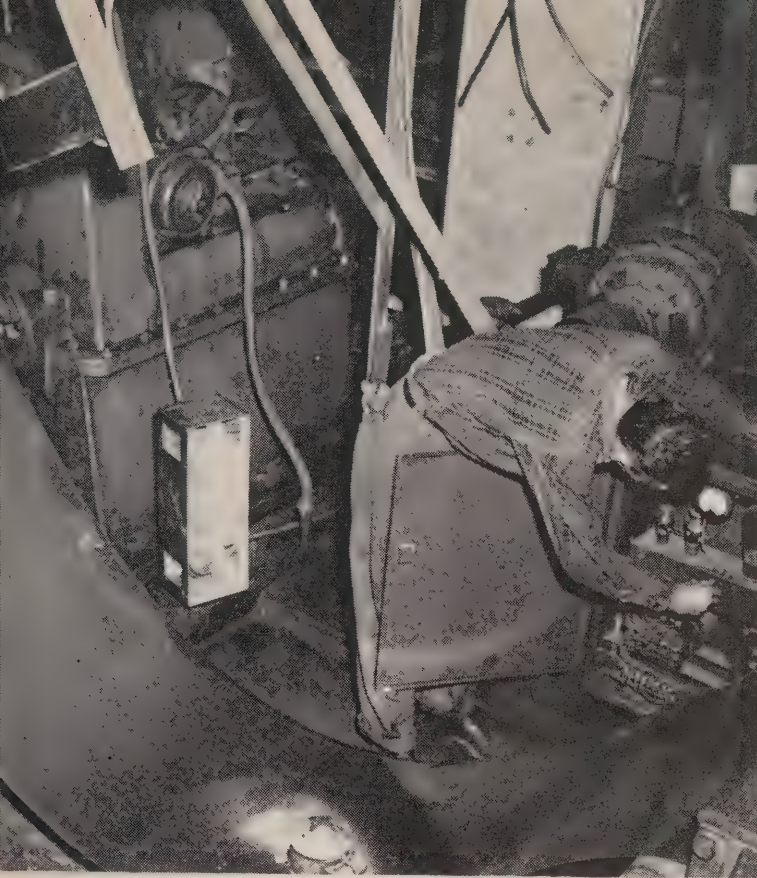
Dominion Foundries and Steel Limited turns out steel castings for every purpose for which steel castings can be used. They vary in weight all the way from about 1 pound to 100,000 pounds.

While a foundry is no new thing and both heavy casting and bench moulding have been carried on for countless years, the increasing employment of electricity wherever practicable has led to a notable speeding-up in production.

High up near the roof of the company's foundry, as *Hydro News* looked in, an attractive young lady was seated on a movable platform operating the electric controls for the sand-slinger which was "shooting" sand at a mile a minute into a ring of moulds. Up to 1941 air guns had been used to spread the backing sand around the patterns for the castings. The installation of this electrical apparatus has meant an increase of 25 percent in production.

In Ontario, the ever increasing use of electricity, while it has tremendously multiplied the amount of work that can be done in a given number of man hours, has swept aside limiting factors and almost incalculably extended the boundaries of industrial achievement so that today most industries with their horizons steadily widening and a whole new world to help rehabilitate, are actually employing more men than they were in the days when they practically relied on manpower alone.

Employment figures for Dominion Foundries and Steel Limited contribute to the statistics which show this to be the case. In 1912, when the first "heat" was poured, this company was employing about 350 men. In 1939 there were 1,800 men and women on its pay-rolls. Today there are 2,500. And if the company carries out the new installations it is said to be considering, it is reasonable to believe that a greater number of workers will be required.

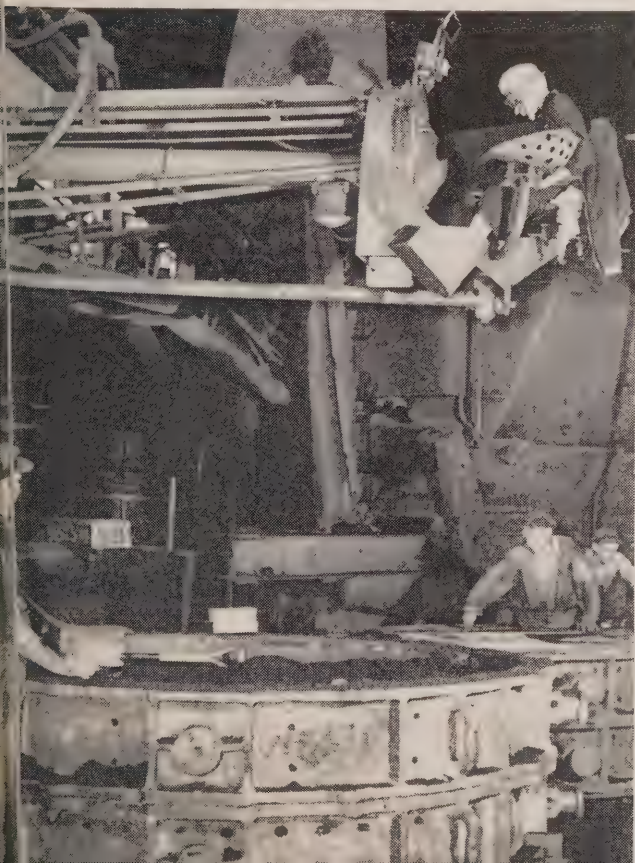


AN INGENUOUS arrangement of "electric eyes" has been set up in the sheet mill of Dominion Foundries and Steel Limited at Hamilton. They regulate the flow of steel sheet into the shears and also guard against defective sheet reaching the end of the line.



INSPECTING AND sorting tin-plate. Production is about 2,000,000 base boxes a year.

ALTHOUGH PERCHED on a moving "saddle" the young lady shown below is not training for a Hunt Club meet. She is about to shoot sand at a mile a minute into a ring of moulds. Installation of the electric sand-slinger has increased foundry production 25 percent.



STEEL CASTINGS varying in weight from one pound to fifty tons are turned out in the foundry. During the war, all the castings, as well as the armour plate, for 1,488 Valentine tanks were made by the company in Hamilton.





C. J. DREW of the Commission's staff explains the intricacies of the System Set-up Board at the First Operator's desk to an interested group.

LEASIDE STAFF HOSTS TO A.I.E.E.

Hydro's Leaside Transformer Station, believed to be the largest in the British Empire, was recently the scene of a tour of inspection conducted under the auspices of the American Institute of Electrical Engineers as part of their discussion group program for the younger engineers.

It might be said, however, that a sizeable quota of members observed enjoying the tour could hardly be placed in the "junior" category, but they evinced no less interest than their more youthful associates.

Hydro's staff at Leaside acted as hosts and there was plenty for everyone to see. Particular interest was displayed in the First Operator's System Set-up Board

and Main Switch Board, as well as the four huge 25,000 kv-a synchronous condensers. The large party was divided into smaller groups for the tour, and each group had a different itinerary in order to avoid crowding and confusion. One guide was assigned to each section which numbered from five to eight men, thus affording an excellent opportunity to each one to have his questions answered directly and in detail.

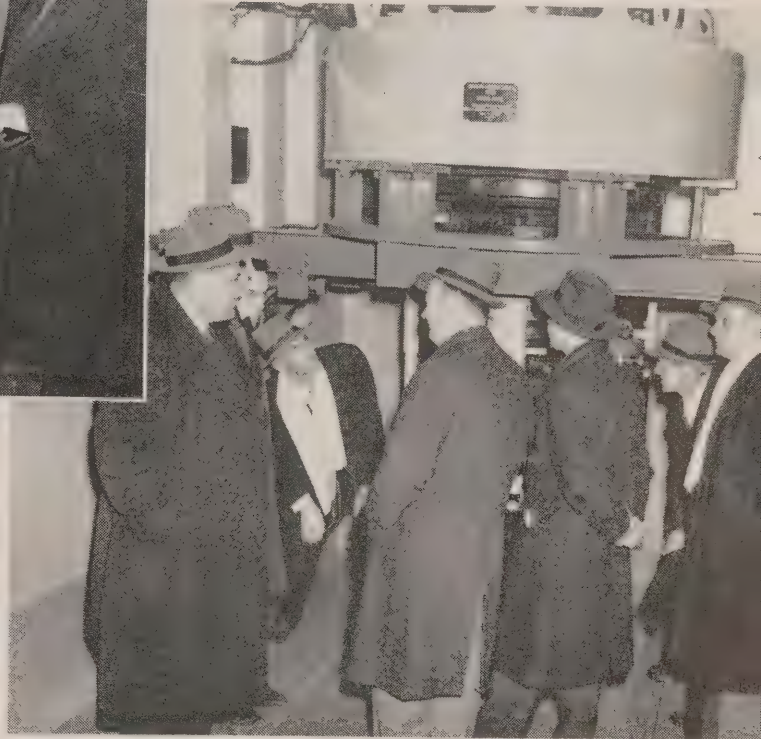
The complete tour required nearly three hours, and at its conclusion all re-assembled in the Erection Building where coffee and sandwiches were served. It was a pleasant ending to an interesting and informative evening.

Tours of the Leaside Station are no novelty to the operating staff as they receive many requests from various groups and organizations interested in getting a close-up of the awe-inspiring array of wires and equipment visible to the passing public on Millwood Road. In the past, various men's church clubs, Boy Scouts and undergraduate engineering students from the University of Toronto have availed themselves of the opportunity of inspecting the station. To anyone interested in the wonder of electricity it is an invaluable experience, while even to the uninitiated it is an impressive example of the planning and effort behind the mere turning of a light switch.



HERE A Section of the group make a close-up inspection of the exciters on a 25,000 kv-a condenser.

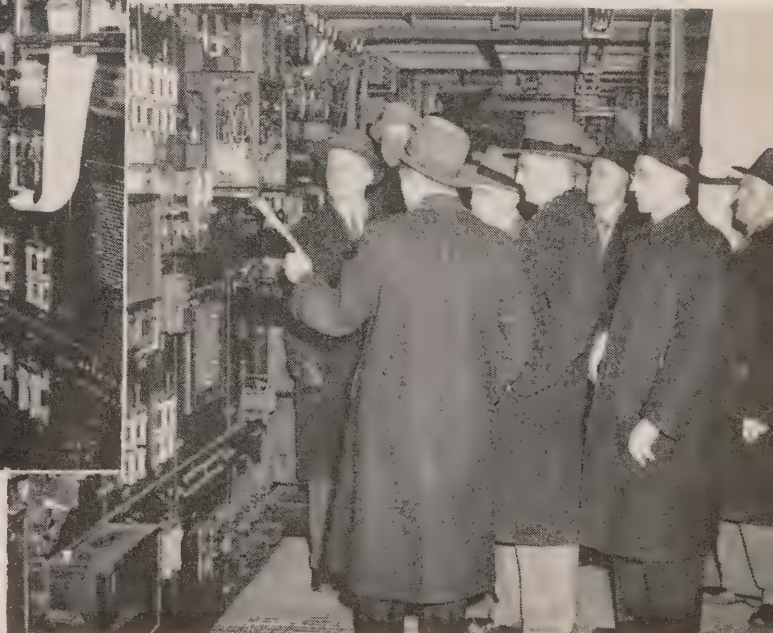
THERE ARE four control bench boards at Hydro's Leaside Transformer Station. On each board there are 65 electrical controls. E. G. Baker, Second Operator at Leaside, is explaining how they work to a group of young engineers who are touring the premises under the auspices of the American Institute of Electrical Engineers. A section of the main switch board is shown in the background.



THERMAL RECORDING instruments record the temperature on the condensers. An interested group is studying them.



J. D. JONES, one of the Hydro guides, is explaining the automatic start-and-stop sequence on one of the condensers.



Flourishing Hydro Municipality

WALLACEBURG

**Residents Are Proud To
Identify It As The
"Working Man's Mecca"**

Louis XIV, King of France, apparently liked beaver hats.

Just what connection exists between His Majesty's desire for the "chapeau de castor" and the industrious, Hydro conscious municipality of Wallaceburg may not be too obvious at first.

History indicates, however, that originally the French had a hand in pioneering this area and suggests that these French pioneers were none other than voyageurs who came to this part of the new world in quest of beaver pelts with which to make chapeaux for Louis and all loyal Frenchmen who decided to follow the style set by the king.

For the next hundred years after Louis XIV had started the fad for the beaver bowler, history seems to skim over any reference to the district. The Scots next come into the picture. In the year 1803 Lord Selkirk rallied 111 adventurous Scottish settlers who, using French maps, made their way up the Great Lakes to a tract of land known as the Baldoon, a few miles from the present site of the town. There, they established a colony. The trip must have been rather rough for the crossing was made in open boats followed by the use of canoes upon arrival at Quebec. They arrived at the Channel Ecarte, and just to bring your geography up to date, this body of water is now known as the Snye which joins the Sydenham River.

About this time, two French-Canadian lads, John Greenlaw and Peter Falardeau, decided that life would be easier chopping down trees than being educated at Laval University. They arrived in the district on foot with heavy packs of surveyors' instruments, second-hand saws and a couple of borrowed axes.

Origin of Name

Commissioned by the Selkirk group to head up the homesteading, Greenlaw and Falardeau got the Southwestern Ontario business booming and the famed riches of the area began to come to light.

Some sixty years later, Wallaceburg was well established and oil was discovered at Petrolia, about fifteen miles to the north. The merchants of Wallaceburg sold supplies to the mushrooming oil camps and outfitted folk who drifted into the district intent upon making fortunes. Wallaceburg was then on its way to becoming a flourishing Ontario town.

The origin of a town's name is always interesting. In the case of Wallaceburg the credit goes to one of the early pioneers, Hugh McCallum, who felt that it should be named after Scotland's famed hero, Sir William Wallace. Before that, Wallaceburg had been known as "The Forks."

It was in 1914 when the townsfolk met in their hall and voted to become part of the Hydro Family. The old steam plant was scrapped and a substation was built. This structure housed a small office, and for the first eleven months of business it is recorded that the load was 47 horsepower and that there was a working surplus of \$88. By way of comparison, the present load is just about 7,000 horsepower and plans

for a new substation, to be built on the corner of Dell and Garnet Streets, are well underway. Doug. Stewart, the manager, informed Hydro News that he is servicing about 22 miles of line around the town.

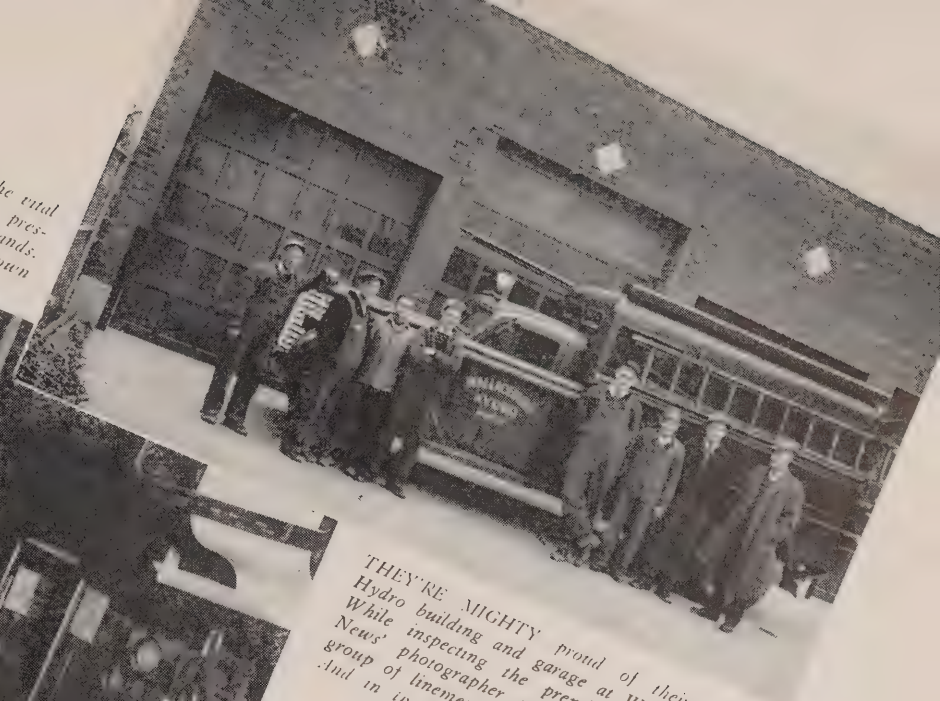
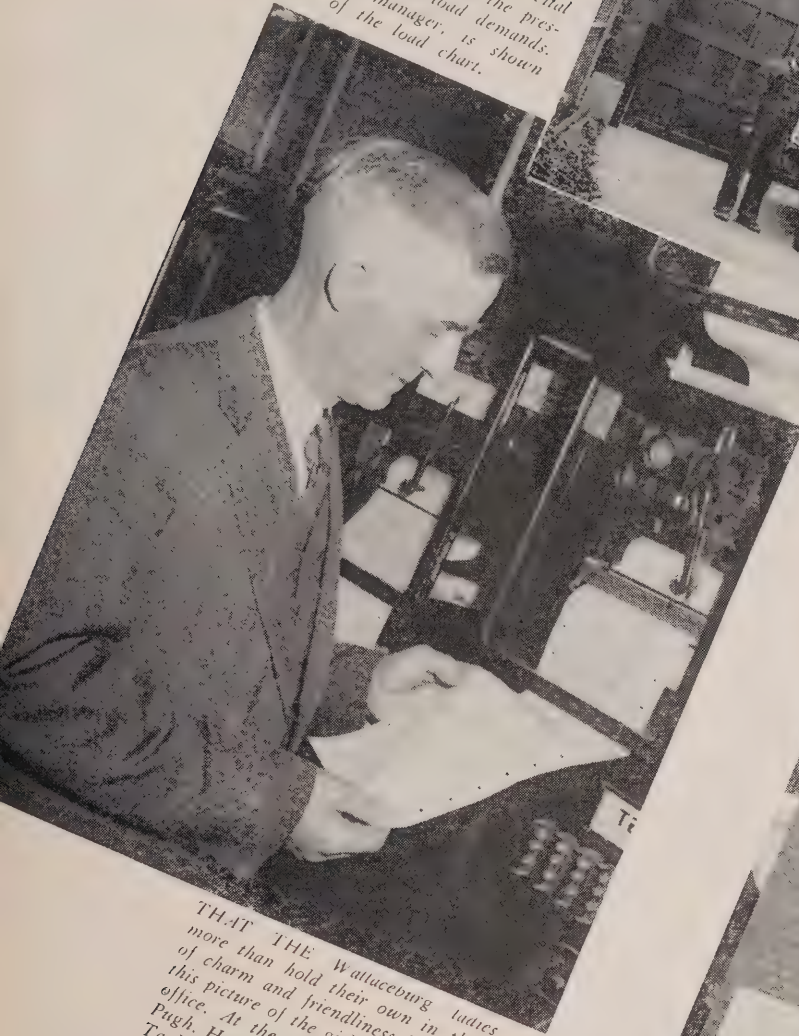
When the town in 1914 entered into a contract with the Commission, there were 368 domestic, 161 commercial and 2 industrial users of Hydro power. Today there are 1,673 domestic, 281 commercial and 58 industrial consumers. Another indication of progress is that in 1916 there was an average domestic consumption of 15 kilowatt-hours at an average cost of 7.4 cents per kilowatt-hour. At the present time the average monthly domestic consumption is 107 kilowatt-hours and the

(Continued on page 32)



IT WOULD appear that this gentleman has more than a passing interest in "paper dolls." Actually, however, the gentleman in question, James Bachus, is quite fully occupied in handling parts at the Wallaceburg Hydro office. The impromptu demonstration of affection for the cardboard model in the showroom is merely an indication of his delightful sense of humour.

IN WALLACEBURG, they are conscious of the vital need for voluntary saving of electricity at the present time in the face of pyramiding load demands. Here, Douglas Stewart, the manager, is shown making an analysis of the load chart.



THEY'RE MIGHTY proud of their fine Hydro building and garage at Wallaceburg. While inspecting the premises the Hydro News' photographer got this picture of a group of linemen beside one of the trucks. And in the background . . . you guessed it . . . the garage.

THAT THE Wallaceburg ladies can more than hold their own in the matter of charm and friendliness is indicated by this picture of the girls in the local Hydro office. At the card index is Mrs. Evelyn Pugh. Her friend at the desk is Miss I. M. Taylor, Secretary of the Wallaceburg Hydro.



SCHOOL'S OUT at the Wallaceburg Hydro building! The Hydro News' cameraman was just in time to get these young lads in his crewfinder as they trooped out of the classroom which is located on the second floor of the local Hydro building.



ONE MIGHT call Wallaceburg a "sweet" town! Its sugar beet industry, which plays a dominant role in the agricultural economy of the surrounding area, has made the town famous. Left, a veritable mountain of beets is shown on the way to the sugar refinery. The tractor in this picture deposits the beets on a flat car for the trip to the plant.

THIS PEACEFUL body of water (right) is quite often the scene of considerable activity. Situated in the middle of the town, Wallaceburg's turning basin accommodates tugboats from the Great Lakes which make this bustling municipality a frequent port-of-call.



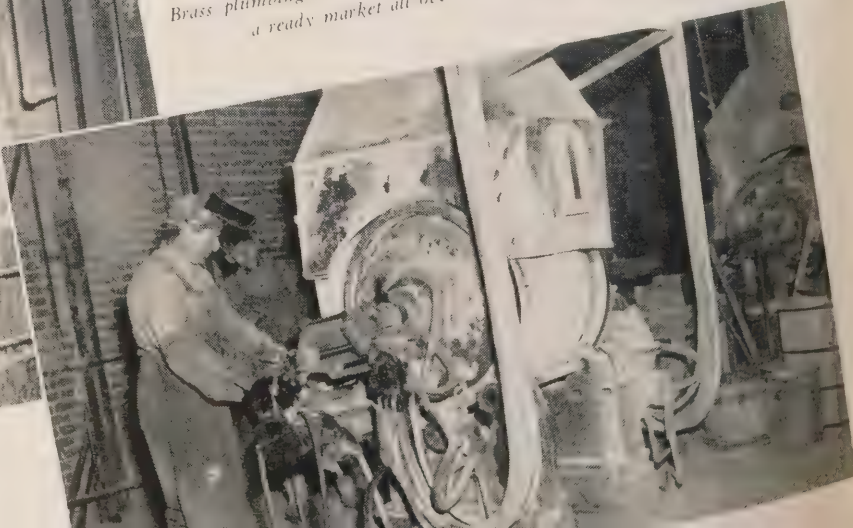
REMEMBER THE hand signals that taught the do, ray, mee's of singing? Hydro News had a first-hand refresher lesson the day Wallaceburg was visited. And by the way, this particular class room (left) is on the second floor of the Hydro Building.

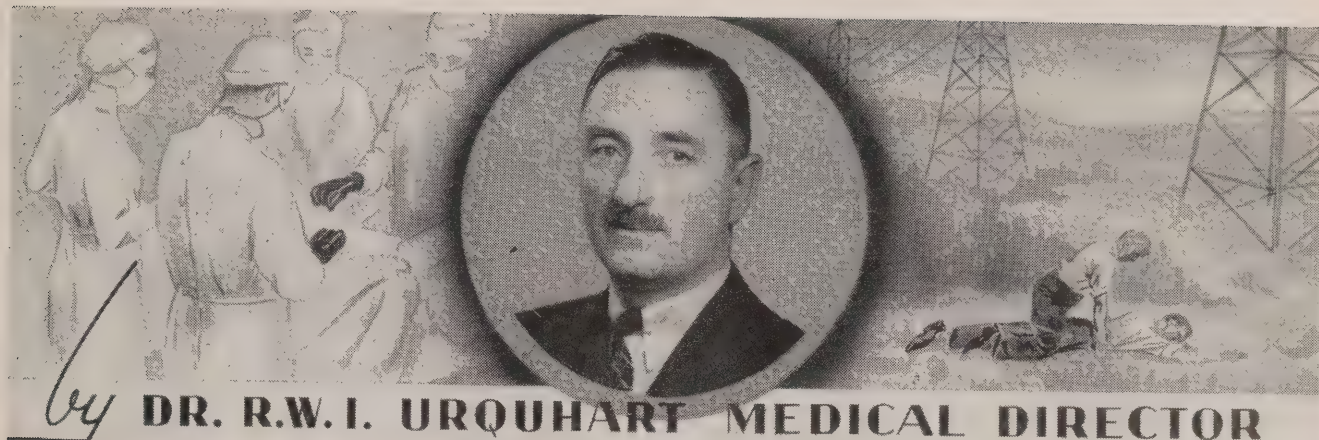


DOWN AT the foundries, Hydro News stopped to inquire how the furnaces operate and were given a first-hand demonstration of brass castings being poured (bottom left).



IT'S PLENTY hot in this electric furnace (below) where brass ingots are melted down to be poured into moulds. Brass plumbing and fittings made in Wallaceburg have a ready market all over the Dominion.





SLEEP

I have just reviewed a medical book on Fatigue and Impairment in which there is a chapter on Sleep. In this chapter most of the known facts about sleep are recorded. It may be of interest to mention a few of these facts.

While everyone recognizes and experiences sleep it is a little difficult to define. It is a condition of unawareness or unconsciousness in which there is lessened activity in the brain. It is a condition of rest. In the twenty-four hour cycle of day and night, sleep occurs as a recurring pattern. There are two types of pattern—one in which the sleep-waking cycle occurs many times during the twenty-four hours and one in which the pattern occurs only once during this period.

Many of the lower animals belong to the first group, rabbits for example have 16 to 21 waking-sleep cycles in the twenty-four hours. Other animals have only one such cycle with an unbroken period of rest during the dark of the night.

Amount Varies

Man begins life in the first group and shifts to the second. The new born infant sleeps most of the time, being awake a total of about two hours in the twenty-four. When a few months old the awake periods total about four to six hours, and the periods of sleep are mainly during the night. From two years to school age the child sleeps about 13-14 hours. From then on the amount of sleep varies with the individual and is governed to some extent by habit.

While one usually regards the state of wakefulness as the "normal" state, the behaviour of the infant suggests that wakefulness occurs only because of the needs of the body for food, etc. With the development of the child to maturity, however, many other kinds of stimuli become operative and the habit of being awake develops. Were it not so, most of

us would spend a lot more time sleeping than we do.

The waking-sleeping pattern of many individuals have been charted. They fall into several definite groups. There is the individual who wakes early, does his best work in the morning, slows down in the late afternoon and evening, and has his soundest sleep in the early portion of the sleep period. Another may follow the same waking pattern, but has his soundest sleep in the later part of the sleep period. Other individuals may wake more slowly and be at their best in the late afternoon or evening, and have their soundest sleep in one or the other por-

tion of the sleep period. Still another may have periods during the day when sleep is apt to occur. Many people sleep much more than they think they do.

Definite Changes

During sleep there are certain definite changes. The pulse rate and the breathing rate both decrease, body temperature and the metabolism fall slightly.

Many studies have been made on the depth or soundness of sleep using the intensity of sound necessary to awaken a sleeper as a measure. There are great individual variations, but in general most individuals fall into one or other of the patterns mentioned above. Sleep appears to be deeper in the winter season.

Most people move about a good deal while sleeping. One study found an average of 20 to 60 movements per hour of sleep. Restless sleep in which movements are increased may occur following mental work or exciting games or after a heavy meal just before retiring. Worry contributes to restless sleep.

There is no agreement as to what should be considered sufficient sleep. Some investigators feel that most people do not sleep enough, others that people sleep too much. Habit plays an important part. Actually some individuals require more sleep than others. The individual who has delayed onset of sleep, with the deepest sleep toward morning, is apt to wake up tired because the deep sleep occurs at the wrong segment of the sleep cycle.

Thorough Relaxation

Tea or coffee were not mentioned as influencing sleep. Actually it is not always the tea or the coffee that is responsible for the sleeplessness, but the excitement and mental activity that often accompanies the occasion on which the beverage is served. Apparently the only way to assist the onset of sleep is by thorough relaxation of the muscles of the body. Try it sometime.

KNITTING KEEPS HER FROM BEING LONELY

There is an old saying: "If you want something done, go to the busy person." The busy people can always find time to do just a little more. An example is Mrs. J. S. Granatstein. During the war years she was a faithful voluntary worker in the Red Cross Sewing room at 50 Bloor Street East, Toronto. She worked from 8 in the morning until 4 in the afternoon, four days a week. She made the workroom's samples, and once set a record by making 35 dressing gowns in two weeks. When her husband died last year, pressure of home responsibilities made it necessary for her to give up the greater part of her Red Cross work. But when the Red Cross had a quota of knitted vantage vests to meet, Mrs. Granatstein's nimble needles went to work. Since last September she has made 35 in her spare time, not to mention boys' sweaters and socks. "Knitting keeps me from being too lonely," she says.

Aguasabon Taking Shape

Construction at Hydro's Aguasabon development in the Thunder Bay district has been proceeding at a rapid pace during the past winter months. Approximately 80 percent of the 85,000 cubic yards of concrete required for the main dam has now been poured. The concrete substructure of the powerhouse is practically completed, and the installation of the turbines is well under way. Much of the concrete lining of the tunnel which will convey the water from the intake to the turbines has been placed. Present prospects are that this 40,000 kilowatt (53,000 horsepower) generating station will be in service on schedule in September of this year. Total cost is now estimated at approximately \$11,000,000.

The main dam is situated on the Aguasabon river about 1½ miles above its outlet to Lake Superior a few miles east of Schreiber. The structure is about 1,400 feet in length, with a maximum height of 120 feet. Three sluiceways, each 14 feet wide, will discharge the excess of spring flood flows into a channel whose excavation entailed the removal of 8,000 cubic yards of rock and 32,000 cubic yards of earth. During construction this passage is being used as a diversion channel for by-passing the natural flow of the river. Temporary open ports located at the upstream end of this channel have been provided at the base of the dam. These ports will be filled in when the dam has been completed.

Forest Products Salvaged

Located some 25 miles upstream is the control dam built by Hydro in connection with its Long Lac diversion project some years ago. This dam will work in well with the Aguasabon development as the main storage reservoir, some 35,000 acres in area. The area to be flooded by the newly created headpond has been cleared in accordance with the requirements of the Provincial Department of Lands and Forests. All merchantable forest products have been salvaged. These include 8,000 cords of pulpwood, 3,000 cords of fuelwood and 175,000 lineal feet of sawlogs. The fuelwood and sawlogs are being used in connection with the Hydro construction programme.

The concrete intake structure is located in an excavated bay on the edge of the headpond about two miles from the main dam. The water will enter radially from all sides into six ports, controlled by a steel-plate, vertical cylinder gate, and will drop vertically downwards some 270 feet through a concrete-lined shaft bored through rock to a horizontal tunnel. This tunnel, 15 feet in diameter, will

Concrete Substructure Of Powerhouse Practically Completed—Vertical 270-Foot Shaft, 3,500-Foot Tunnel And Steel Surge Tank Are Features Of New Plant

convey the water along a distance of nearly 3,500 feet to a steel penstock. A hundred feet outside the tunnel mouth this penstock will bifurcate in order to feed the two generating units which are now being installed in the powerhouse on Terrace Bay.

Concreting Tunnel

During a recent visit to Aguasabon, Hydro News made a tour of the tunnel which was then being prepared for concreting. A bulldozer and mucking machine were being used for cleaning the invert or floor in the wake of a crew of

By Harry M. Blake,
Hydro News

hardrock miners engaged in scaling operations. These men were working on an elevated platform, removing loose rock from the roof, while their helpers were hosing the arching walls in preparation for similar operations. A track for the mucking machine and its train of dump-cars, previously laid down the centre of the tunnel floor, was being removed, section by section, as the cleaning-up progressed.

Variety Of Forms Used

At the upstream end of the horizontal tunnel a wooden form was being set for the concreting of the "elbow" which will join the horizontal tunnel to the vertical shaft from the intake. A 90 degree curving form was being used, and we were told that it had to be cut into four sections for lowering down the shaft into position. The concrete was to be filled in between its outer surface and the surrounding rock. For the concreting of the shaft itself a steel sectional form, resembling a big barrel, was to be employed.

We were informed that the concreting of the tunnel throughout its entire length would be effected with the use of a Blaw-Knox cylindrical form, 90 feet in length. This type of form is supported by internal collapsible braces. It is moved on rails into position and is then bolted to concrete guide curbs previously poured

along the outer edges of the tunnel floor to steady it for each successive pour. When each pour is completed, the form is collapsed and moved on for 90 feet to the next set-up. The engineers were expecting to carry out the job at the rate of a 90 foot section every 24 hours.

Steel Surge Tank

A feature of the Aguasabon development is the steel surge tank. Located on a hill about 480 feet upstream from the powerhouse and directly above the tunnel, the complete structure is about 240 feet high. The main tank which is 32 feet in diameter and 90 feet in height is set upon a structural steel tower 150 feet high. Connection is made with the tunnel below by a steel riser pipe, 15 feet in diameter. This pipe extends downwards 150 feet from the bottom of the tank to the ground surface and thence through 100 feet of rock shaft to the tunnel. The purpose of the surge tank is to dampen sudden water hammer pressures and to provide an immediate water supply for sudden powerload demands.

When concreting is finished, the entire tunnel structure from intake to penstock will have a uniform diameter of 15 feet. For the first 100 feet of exposed length the penstock, in effect, will be a continuation of the tunnel, with the same diameter. Then it will branch into two 10' 6" diameter pipes which, in turn, will be reduced to 9 feet diameter against butterfly control valves located at the entry to the scroll cases which feed the water directly into the turbine runners. The operating head of water will be 290 feet.

Generating Equipment

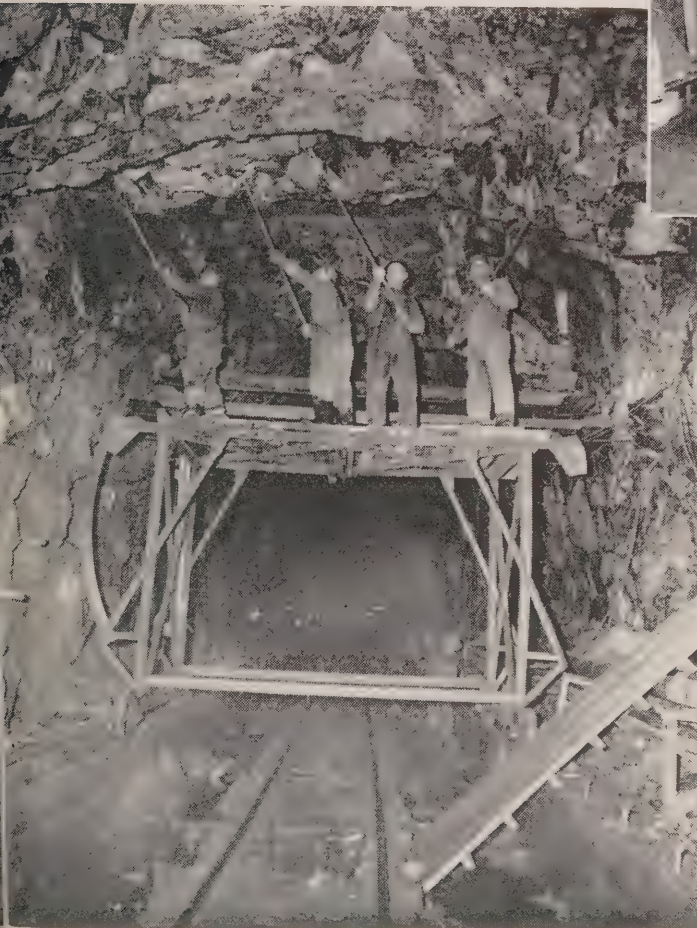
The rotors for the generating units in the powerhouse will be shipped with the rim punchings stacked and with the shafts assembled so that a minimum of field work will be required upon their arrival—an important consideration in view of the scarcity of artisans skilled in this very specialized type of work. Each rotor, when fully assembled, will weigh approximately 90 tons. The stators, plus other non-moving generator parts, will weigh about 110 tons apiece. The units will be entirely enclosed in housing weighing 13 tons.

The field work at Aguasabon is under the joint supervision of H. A. Johnson, resident engineers, responsible for the practical, on-the-spot work associated with the hydraulic and electrical design, and C. L. Hays, in charge of work crews and actual construction.



INSIDE THE 3,500-foot tunnel, which will convey the water from the intake to the powerhouse, a bulldozer and mucking machine are cleaning up broken rock in preparation for the concreting of the invert or floor.

HARDROCK MINERS are employed in scaling loose rock from the roof of the tunnel. They advance stage by stage, with cleaning-up operations following closely in their wake. Like all tunnel workers, they wear safety hats



PLACING THE form for the concreting of the elbow at the intake end of the tunnel. The concrete will be filled in between the outer circumference of the form and the rock. Built in a 90 degree curve, it was necessary to cut the wooden form into four sections, each $22\frac{1}{2}$ degrees in arc, in order to lower it down the 270-foot vertical shaft which will convey the water from the intake into the tunnel. For the concreting of the shaft itself, a steel sectional form will be used.



ABOVE IS the concrete conveyor trestle for Hydro's dam at Aguasabon. At extreme right is the automatic mixing plant being used in the preparation of 85,000 cubic yards of concrete required for construction. In the distance is the plant of the LongLac Pulp and Paper Company, one of the industries which will be served by the "new power". The dam will be 1,400 feet in length, with a maximum height of 120 feet.



BELOW IS shown the framing for temporary construction housing at the powerhouse site. A locomotive, operated by storage batteries, is used to pull a train of dump cars into the tunnel which is elsewhere described.

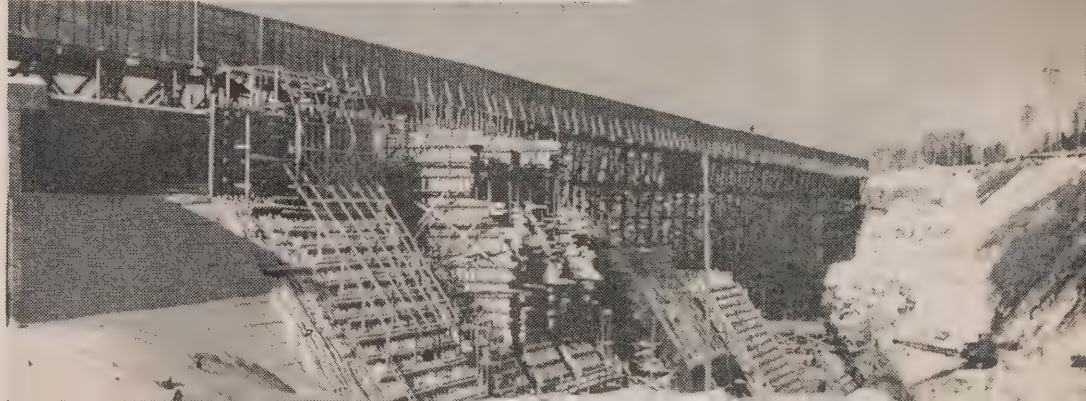
FORMWORK WAS built during the winter for three sluiceways, each 14 feet in width, which will handle flood waters and overflows when the dam is completed. Below this construction are the diversion works for by-passing the natural river flow while the dam is being built.

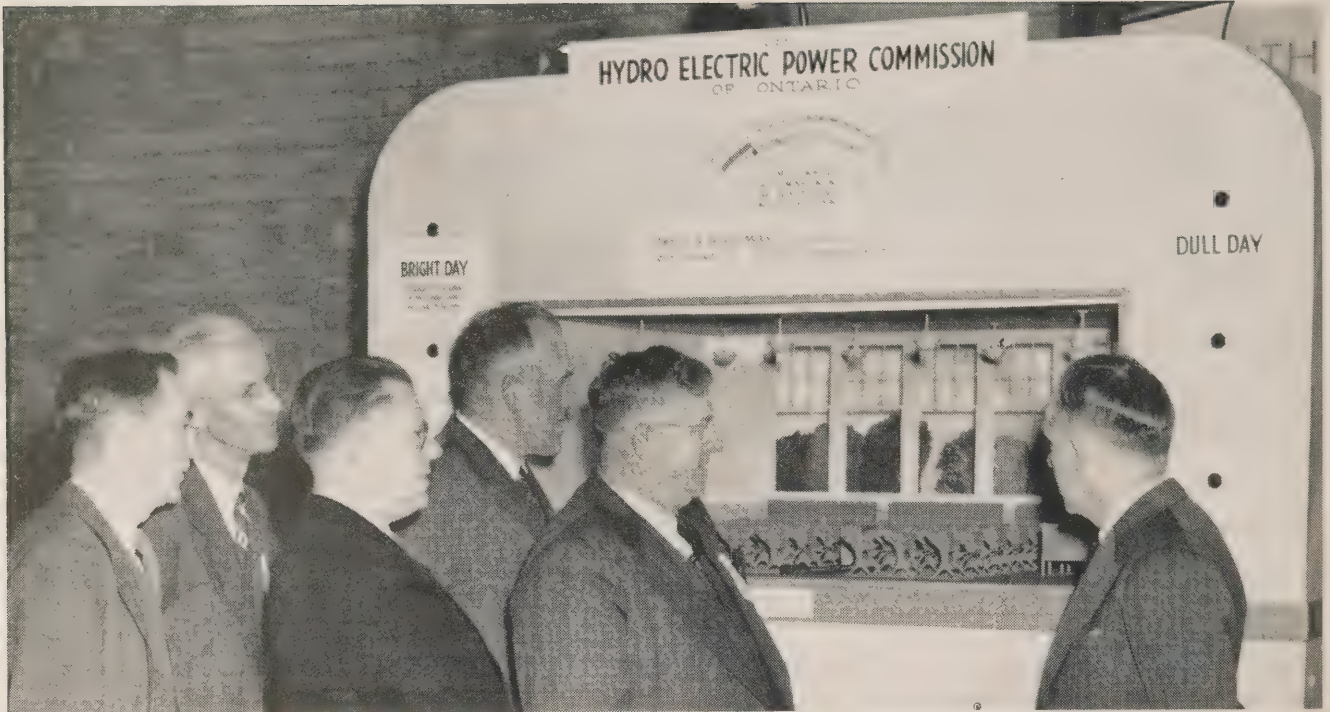




LOOKING AT the downstream side of the dam, the forms into which concrete is being poured are protected from the weather—a necessary precaution where winter blizzards rage and the temperature may drop to 40 degrees below zero.

BELOW, A section of finished concreting is shown in the foreground, with the formwork for the sluiceways in the middle distance.





A GROUP of executives pause to view the model. Left to right: J. A. Bain, Woodstock, secretary of the Urban Trustees' Section; T. E. Jackson, retiring president; Rev. J. V. Mills, Toronto, executive secretary of the Trustees' and Ratepayers' Department; R. S. Kilborn, Toledo, retiring president of the Township School Area Section; W. H. Norris, president-elect; and C. W. Scace of Brockville, president-elect of the Trustees' and Ratepayers' Department.

LIGHTING AND LEARNING

By John A. Murphy,
Hydro News

When is sunlight not bright enough?

This is not a schoolboy riddle but a serious problem that lighting engineers have long been studying in their efforts to improve illumination in homes, offices, factories and schools. Perhaps nowhere is the question of more importance than in the classrooms where every day thousands of pairs of youthful eyes pore over the multiplicity of text books that comprise the modern version of the "Three R's."

The practical application of the problem was graphically illustrated at the recent Ontario Educational Association Convention in Toronto by a special exhibit designed by the Commission's lighting engineers. The display was shown for the first time at the Canadian National Exhibition last autumn.

Engineered by Hedley Davidson of Hydro's research staff, the exhibit consists of a scale model of a typical classroom, complete with pupils' desks arranged in rows, and the teacher's desk

on the usual dais at the front of the room. Overall dimensions of the complete exhibit are 6 feet wide, 4½ feet deep and 7 feet high. To add to the authenticity of the layout a small rosy apple occupies a conspicuous spot on the front of the teacher's desk. A row of windows along one side of the room look out on a bright blue sky tastefully adorned with fluffy patches of cloud. There are no pupils at the desks so one may assume that, the weather being so pleasant, they have all gone fishing.

Light Sensitive Cell

To get to the less obvious and more technical aspects of the display, one of the desks is equipped with a light-sensitive cell and moves back and forth across the room on a track. As it moves it records the amount of light falling on each row at desk level. The actual reading is shown on a foot candle meter on the outside of the booth. Every 30 seconds the amount of light is automatically varied to simulate conditions under bright, dull or artificial light. As the situation changes in the model, cards around the display are illuminated to show the spectators what conditions are

in effect. The exhibit is controlled entirely by electronics. These points were explained by a member of the Hydro research staff who was in attendance at the O.E.A. convention.

Main purpose of the Commission's engineers in designing the model was to illustrate the manner in which light density may vary in any classroom during the course of a day. Particular emphasis was placed on the inside row of desks which are farthest removed from the windows. In this respect, Mr. Davidson stated that in many of our schools the inside row did not receive sufficient light even on bright days.

Recommended Colors

Mr. Davidson also directed attention to the colours of the walls and ceilings in the model. The colours used are of the recommended type with high light-reflecting properties. Desk tops, too, are of a light finish in order to reflect light rays rather than absorb them.

At the O.E.A. Convention, the exhibit was set up at Central Technical School where the Trustees' and Ratepayers' Section held their meetings. Located in a

**Commission's Scale Model Classroom Designed To Show How
Light Density May Vary During A Day Is Displayed
At O.E.A. Convention — Studied With Interest
By Trustees From All Parts Of Province**

strategic corner on the convention floor, the little schoolroom was the cause of more than one trustee arriving late at a session. Many, who stopped for a brief glance, remained to ask questions.

One delegate who expressed considerable interest in the model was Rae Speirs, Director of Physical Education for the Toronto Board of Education. Mr. Speirs is co-author with Dr. J. T. Phair, of "Good Health," the official text on physical education for Toronto's secondary schools. The importance of proper lighting in maintaining high health standards among students is discussed at some length in this book.

A feature of the model that can be

incorporated into an actual classroom installation, is the photo-electric cell that measures the amount of light in the room. With such a device in the room the necessary lights can be turned on whenever the indicator shows the density of light has fallen below the minimum standard agreed upon. In certain schools in the United States where such a system is in operation certain pupils are given the responsibility of watching the indicator and turning the lights on or off as required.

Automatic Control

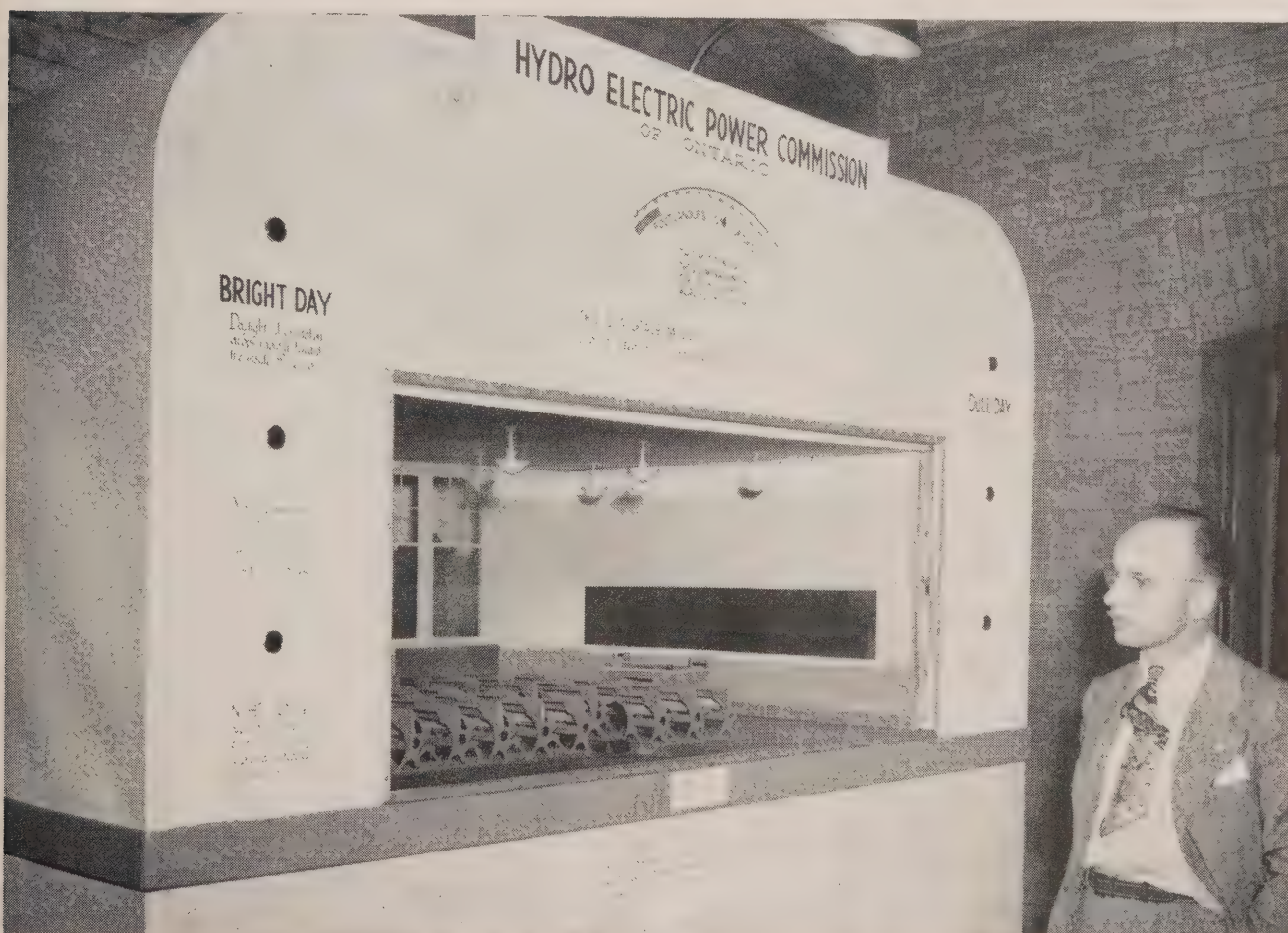
Another possibility, although as yet not in wide use, is automatic control of lighting in the same manner that a

thermostat regulates heating. This could be done by the addition of a device that would initiate a current to turn on the lights whenever natural light became inadequate. Similarly, if the daylight became stronger the artificial lights could then be turned off by the same principle.

The Commission's exhibit was studied with keen interest by school officials who are desirous of providing the best possible facilities for health and study of the pupils in their care. And who knows but one day will see the perfection of an electronic invention for permanently instilling fundamental principles of trigonometry in the minds of unreceptive students?

EON AND NEON

The Hydro Commission announcement that display lighting will be permitted again is a happy decision. It seems like an eon since last we saw neon—Toronto Globe and Mail.



THE DETAILED accuracy of the exhibit is shown in this close-up. Looking on is Tom Dickson of the Commission's staff who was in attendance during the Convention.

TEAMPLAY KEYNOTE OF PROCEEDINGS AS HYDRO CONSTRUCTION MEN MEET

How can the spirit of teamplay best be fostered and developed so that the recent reorganization of the Engineering Branch of Hydro can be made effectual in practice as well as in theory?

This was the question speakers set themselves to answer at the Annual Conference of the Construction Division held in the King Edward Hotel, Toronto, on April 2.

The keynote was struck in the welcoming address of David Forgan, Director of Construction. In a characteristic speech, Mr. Forgan referred to the growth of that section of the Engineering Branch which was now committed to his charge. The loyalty of its personnel, was, he was proud to proclaim, beyond question. He spoke of the problems faced by those on the upper levels of Management, who at all times had to consider the whole Hydro situation, with its many implications, and urged the greatest alacrity and vigour in carrying out their decisions.

At the luncheon presided over by Cecil Ramey, Superintendent for Station Construction in the London area, W. Ross Strike, K.C., Second-Vice-Chairman of the Commission, stressed the vital necessity of complete co-operation between office and field engineers. He made a particular appeal to the younger men coming into the Engineering Branch, calling upon them to recognize in the task they were sharing with experienced members of the staff a work of first importance to the welfare and progress of the people of Ontario.

Teamwork Emphasized

At the afternoon session, with Robert Lightbody, Superintendent of Hydro's Bloor Street Stores, occupying the chair, A. H. Frampton, Deputy Assistant General Manager—Engineering, emphasized the vital need for all-round teamwork in the vital undertakings upon which the Commission was embarked. There had, he said, always been co-operation in the Engineering Branch, but reorganization had opened the door for a readier interchange of views and had provided the machinery for smoother "passing plays" between departments.

The new arrangements, Mr. Frampton pointed out, were aimed at a more efficient co-ordination of the activities of the Design, Construction, Supply and Research Divisions, and the re-grouping in each division was intended further to implement and facilitate this scheme. The speaker warned, however, that this re-

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Reorganization Opens Door For Readier Interchange Of Views And Provides Machinery For Smoother "Passing Plays" Between Departments, States A. H. Frampton
—Many Topics On Agenda

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By Harry M. Blake,
Hydro News
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organization would fall short of its objective unless it were given the unfailing support of all concerned. He emphasized the necessity of all divisions and departments accustoming themselves as quickly as possible to the "feel" of the new machinery and utilizing it to the best advantage. This, he felt, was of the greatest importance in view of the work that lay ahead.

In this connection, Mr. Frampton drew attention to the Commission's 1948 budget which, he said, provided for the expenditure of approximately \$81,000,000 on engineering construction alone. This, he pointed out, was nearly double the amount expended on similar work between January 1 and October 31, 1947, and more than four times the sum spent in 1946. Last year, the speaker said, some 5,200 men were engaged in construction in the field. It was expected

that this year the Commission alone would employ not less than 14,000 men, and this number would be appreciably increased by the workers engaged by the contracting firms.

Technical Training

Replying to questions with regard to technical training for practical men on construction jobs, Mr. Frampton inferred that the Commission had considered it impractical to mobilize a special teaching staff for advanced courses of theoretical study that only a few individuals might desire to take. That did not mean, however, that nothing was to be done along educational lines. He pointed to the Linemen's Training School and the special courses arranged for foremen and drew attention also to the Frontier College and the other facilities provided for organized study at construction camps. Wherever possible, the Commission was only too anxious to help. As far as his own responsibility permitted, the speaker said he was prepared to advocate every possible assistance to men who were eager to improve their positions.

Human Element Stressed

Focusing an eloquent plea for cooperation on the human element involved. John Dibblee, Manager of Personnel, said

(Continued on page 28)



"YOU'RE ALWAYS going places, so this may help," observes W. Ross Strike, K.C., Second Vice-Chairman of the Commission, as he presents a travelling bag to Line Foreman F. Rowat who has been 25 years watching steel tower lines go up all over the province.



READING THE convention program and looking over the dinner menu is J. Hamilton of Bognor. Smiling on his right is H. M. Albert, Chatsworth. On his left, K. Bessy, Walkerton, and Foreman E. Kitley, Owen Sound, are gastronomically attentive.

PRESENTATIONS WERE made by Gordon Mitchell, Generation Construction Engineer, to Construction men with 25 years' service. They are (from the front) Fred Coyle, W. J. Rennie, J. Owens, F. Cleary, J. Morris, R. D. Gauci, I. Ritchie, T. White and R. C. Lane.



"OLD TIMERS"—and they've still got lots of the stuff that keeps us rolling. Charles Cooksley, Scarboro', on the left, and Charles Gurney, Kipling Avenue.

"THE DIFFERENCE between a Hydro construction camp and a 'Construction' convention is just two bucks," Bob Lightbody tells A. A. Richardson, General Superintendent at Des Joachims.

AT HEAD table for luncheon proceedings are (right to left) Cecil Ramey, Chairman; W. Ross Strike, K.C., the Commission's Second Vice-Chairman; George Archer; "Dick" Roberts; Andrew Clark and W. McKenzie. If the years of service contributed by the nine gentlemen facing the camera were combined in one individual he would have started working for Hydro in the reign of George I.



ROUSING OVATION ACCORDED NEW COMMISSION CHAIRMAN AT CONSTRUCTION BANQUET

Climaxing a series of heavy business sessions during the day, the 17th Annual Construction Convention banquet on the evening of April 2 provided an opportunity for Robert H. Saunders, C.B.E., K.C., the new Commission Chairman, to make his first official appearance before Hydro's "front line" construction men.

David Forgan, Director of Construction, presided and R. L. Hearn, General Manager and Chief Engineer, who introduced Mr. Saunders described the latter as "a dynamic character" and as a man "who possesses the qualities construction men like."

The General Manager said that Mr. Saunders had had more words in newspapers and magazines and over the radio than any other man of 45 years of age.

"We have in attendance tonight," stated Mr. Hearn, "a Chairman who can work with us in meeting the challenge that is ahead—the greatest challenge in

●
"Bob" Saunders Makes First Official Appearance Before Hydro's "Front Line" Construction Men — Address Sparkles With Humour — Old Timers Are Remembered — Department's Fine Record Stressed By David Forgan

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By the Editor
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the history of the Commission. I introduce the Chairman who is known to the public as 'Bob' Saunders."

On rising to his feet, Mr. Saunders received a rousing and prolonged ovation.

At the outset, his address sparkled with spontaneous humour, and laughter re-echoed throughout the King Edward's great Crystal Ballroom as he proceeded to tell his audience his experiences in

exploring the mysteries of electrical terms.

Flaunting a manuscript of electrical definitions in the air and throwing challenging glances at the Commission's top-ranking engineers, Mr. Saunders exclaimed: "Do you know what an Ohm is?" I know, I've got it right here. Listen."

The Chairman then proceeded to read the definition which provided an excellent vehicle for his keen sense of humour. Possibly the pièce de résistance so far as these definitions were concerned, however, came when Mr. Saunders squared his shoulders and then tackled the meaning of Power Factor. At that point, the Chairman had the construction men holding their sides, holding tables and even holding their neighbours as they rocked with laughter.

"What are you laughing at?" asked Mr. Saunders while maintaining a perfectly

(Continued on page 24)



THERE ARE few people in Ontario who will not readily identify the gentleman "in action" at the mike. He is Robert H. (Bob) Saunders, C.B.E., K.C., the Commission's Chairman. Hydro News' photographer Burt Helling got this candid shot at the recent annual Construction Department dinner. The gentleman smilingly regarding his cigar is R. L. Hearn, General Manager and Chief Engineer, while on the right is pipe-smoking David Forgan, Director of Construction.



THESE ARE among the gentlemen who occupied places at the head table on the occasion of the recent Construction Department banquet in the King Edward Hotel. From left to right they are: E. M. Banks, Comptroller, H.E.P.C.; J. R. Montague, Director of Engineering; M. J. McHenry, Director of Consumer Service Division; A. B. Cooper, Dr. Otto Holden, Assistant General Manager—Engineering; Hon. L. Dessault, Minister of Mines and Forests for the Province of Quebec; and W. Ross Strike, K.C., Second Vice-Chairman of The Hydro-Electric Power Commission of Ontario.



THOSE present at the Construction dinner were the members of this group. From left to right: Jack Thompson, Building Engineer; Harry Maloney Electric Company; Jim Woodard, Federal Wire and Cable; E. W. Chief Electrical Inspector, H.E.P.C.; P. F. Wayman, Line Superintendent, H.E.P.C.; and V. A. Beacock, Rural Engineer.



THESE GENTLEMEN were eagerly awaiting the first course when Hydro News got this picture. From left to right they are: John Dibblee, Manager of Personnel; A. W. Manby, Assistant General Manager—Administration; J. M. Hambley, Director of Operations; W. P. Dobson, Director of Research; and R. T. Jeffery, Consultant on Municipal Affairs.

M. W. MONK of Kipling Avenue station sneaks a light from J. Schonauer of Ottawa.



THESE BOYS are really delighted to be present at the "Construction" convention. Left to right—G. E. Acheson, H. R. Duff and A. Huddleston.





AT CONSTRUCTION CONFERENCE

THE KEYNOTE is "Co-operation." Right to left—A. H. Frampton, baritone; A. T. Clark, second tenor; S. W. Eagan, first tenor; Frederick Coyle, bass.

Rousing Ovation

(Continued from page 22)

serious mien. "Do you know? You will all understand this, I am perfectly sure."

He then proceeded to start reading the following definition of Power Factor: "In direct current work the product of the current and voltage is equal to the power in watts. In alternating current work this is seldom the case and the product of the current and voltage must be multiplied by another multiplier called Power Factor."

At this point, the speaker looked round the room, reached for a glass of water and then exclaimed: "Poor Saunders trying to keep up with that!" (Prolonged laughter)

Then referring to the definition again, he read: "Power Factor means exactly what it says . . . The reason for this is difficult to understand."

"You imagine him telling me?" asked Mr. Saunders while his audience again rocked with mirth. The "him" in this instance was one of the Commission's engineers who had prepared the definitions.

Greatest Single Economic Factor

After disposing of the electrical terms, the new Chairman struck a serious note. "When I go over the history of The Hydro-Electric Power Commission of Ontario," he said, "when I think of the tremendous progress which has been made, I realize that it is a privilege for me, a privilege for Mr. Challies and for Mr. Ross Strike and Dick Hearn and for everyone of us to be associated with an effort like this that is so important to the welfare of this Province and this Dominion. Our work at the Hydro is, without any question, the greatest single economic factor in this country. It is the greatest single factor that will bring prosperity to the Province of Ontario and, yes, to the Dominion of Canada. (hear, hear) It is a great privilege for you and for me to be associated with this great work."

After he had paid sincere tribute to Vic Nolan, Red Burns, Jack Truesdale, Black Jack McKinnon, Jim Scott and Cecil Ramey who had been identified with the Commission's Construction Department for over 30 years, Mr. Saunders declared: "I am going to tell the people of this Province something about this wonderful organization—an organization which has done so much for the benefit of this Province."

Mr. Forgan, in his address, noted that they did not have everyone with them they would like to have had. "Most," he said, "have to stay on the job and keep things going."

Recalls Old Timers

He said that this year's convention of the Construction Department marked the 17th and he was astonished to realize that it was the 13th over which he had

had the honour to preside. Looking back over 20 years and more he remembered such old-timers as A.V.T., Jim McGraw, D. M. Johnston, Ernie Latimer and others who, he hoped, were present in spirit. They were, he said, giants in their day.

"At our business session we marked the attainment of 25 years of continuous service in this department by 10 employees," continued Mr. Forgan. "We now have 45 with more than 25 years' service. The Dean of the lot is Bill McKenzie with 38 years with the Commission behind him, closely followed by Goldie Walker."

At another point, the speaker remarked: "How many construction companies across Canada or even elsewhere have a record like this? I know of none because they have not had the opportunity to maintain so many in continuous employment for so long a period of time."

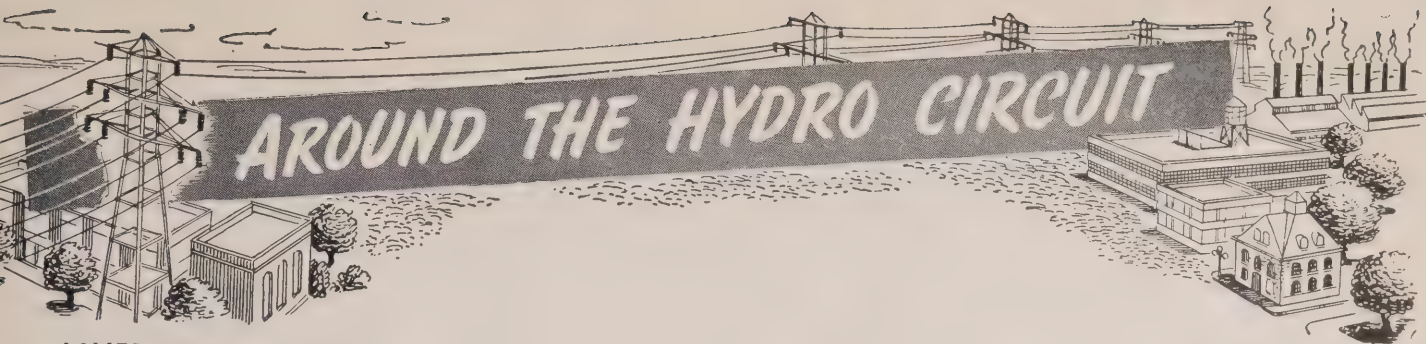
In closing he said: "I wish to voice my thanks to the Commission, its managerial staff, the different department heads and the host of departmental employees with whom we work—and without whose cooperation we could not do our part—for the help they have given and the forbearance which they have shown with our crankiness and peculiarities throughout the year. Finally, I must pay tribute to Phil Wayman and his committee for the able and thorough manner in which they have organized and run today's meetings and dinner."

During the business sessions presentations were made to the following members of the Construction Department staff who have completed 25 years' service: F. J. (Mike) Cleary, Fred Coyle, Dick Gauci, R. C. Lane, Jack Morris, Ike Ritchie, F. Rowatt, T. R. White, W. J. Rennie and J. Owens.

Ladies were not in attendance at the sessions but special tribute was paid to Miss D. E. McMullen who has also completed 25 years' service and to whom a presentation was made in her office.



MOST JOKES at conventions are "chestnuts," but Dick Roberts entertained at the Construction luncheon with a selection of mirth-producing stories as surprising as any of the achievements of this new Atomic Age.



JAMES DRADER HAWKEN



Some forty-four years ago, JAMES DRADER HAWKEN was born in Sarnia and when he was three years old his family moved to Wallaceburg. It was here that Mr. Hawken received his primary and secondary education and later graduated as a chemical engineer from the University of Toronto.

It was the year that war broke out that he first went into public office and until 1944 he was an alderman on the town council. The next two years he held office as deputy reeve and in 1947 he was chosen to represent the townsfolk as a Hydro commissioner.

In business life, he manages his own milling company. Married with two daughters, Mr. Hawken claims he is too busy to have any recreation, but his friends consider him a first-class golfer.

A. DOUGLAS STEWART

When the Hydro consumers of Wallaceburg drop in to pay their bills, it has been a practice of long-standing to open the manager's door and say "Hello". DOUG STEWART is the friendly type of man who, in his busy life, always has time to exchange greetings and knows almost everybody in Wallaceburg by their first name.

For one thing, Mr. Stewart was born and educated there and has been with Hydro for twenty-eight years, starting out as a lineman under L. G. McNeice, who is at Orillia now.

Having a penchant for fishing, his greatest moments of leisure are when he is in his old slacks and fedora sitting on the bow of his punt just waiting for a small-mouth bass to take hold.

COMMISSIONER GILHULY

It was on the 11th of February in 1880 when ANDREW LEO GILHULY was born in Raleigh Township. He attended public and separate schools in the district and settled down when he was quite young to be a tobacco farmer. In 1933 he first stood for Town Council and for nine consecutive years he held office. For one term he was Mayor of Wallaceburg, and he sat on the local Hydro Commission for five years, one as Chairman. This year he is again chairman.

Baseball is his favourite sport, and while he stopped playing many years ago, he continues to follow the game and is very firm in his opinion that there is no team like Detroit. He is married and has two sons, one daughter and two grandchildren.

J. H. PEARCY DIES

J. HARRY PEARCY, aged 67, formerly Chairman of the Tottenham Public Utilities Commission, died recently in a Toronto hospital.

Mr. Percy was born in Tecumseh and received his education at Rich Hill School. For a time he was engaged in farming, and later came to Tottenham where for a few years he carried on a dray business. Since then he had been engaged in buying and selling cattle. Becoming interested in municipal affairs he was a Councillor for several terms, and at the time of his death he was serving his fourth year as Reeve and Chairman of the local commission.

Keenly interested in lawn bowling, he was generally regarded as one of the best bowlers in the district and was a familiar figure at tournaments in which he won many prizes. Mr. Percy was a member of the Tottenham Masonic Lodge.

He is survived by a brother, Sam of Toronto. Two sisters and one brother predeceased him.

MAYOR MACDONALD



JAMES ERIC MACDONALD, the Mayor of Wallaceburg, was born in 1900, and after graduation from local schools, he attended the old Woodstock College. After having been in the advertising business and in the lumber trade, he settled down to be a contractor in 1929.

He loves to see buildings grow and watches the operation with keen interest from the time the first sod is turned until the chimney is pointed up. During the war, his hobby of boat building was so useful that he went in for manufacturing on a large scale for the Canadian Government.

His public life began in 1940 when he was elected as a local Hydro Commissioner. He held this post for three years and served on the Parks Commission for two years.

He is still on the Commission, but he is now the chief magistrate of Wallaceburg.

E. V. BUCHANAN RECEIVES AWARD

A recent announcement of the Canadian Section of the American Water Works Association stated that E. V. Buchanan, General Manager of the Public Utilities Commission, London, Ontario, had been nominated to receive the Fuller Award this year. This award is made to Mr. Buchanan for outstanding service in the waterworks field.

"OLD NUMBER ONE" GETS VACATION AFTER BEING ON JOB FOR 11 YEARS

A 25,000 kilovolt-ampere synchronous condenser is an impressive piece of equipment. To one unversed in the intricacies of electrical engineering it is even more awe-inspiring. Consequently the overhaul of such a large item is a prodigious task that has to be viewed at first-hand to be fully appreciated.

At Hydro's Leaside Substation there are four of these condensers. Their function is to correct voltage drop incurred in transmission of power from the Beauharnois and Gatineau plants in Quebec. The correction is necessitated by the length of the lines, which are the longest 220 kv transmission circuits in the British Empire. During the war years, the all-out requirements of industry placed such a strain on our hydro-electric system that

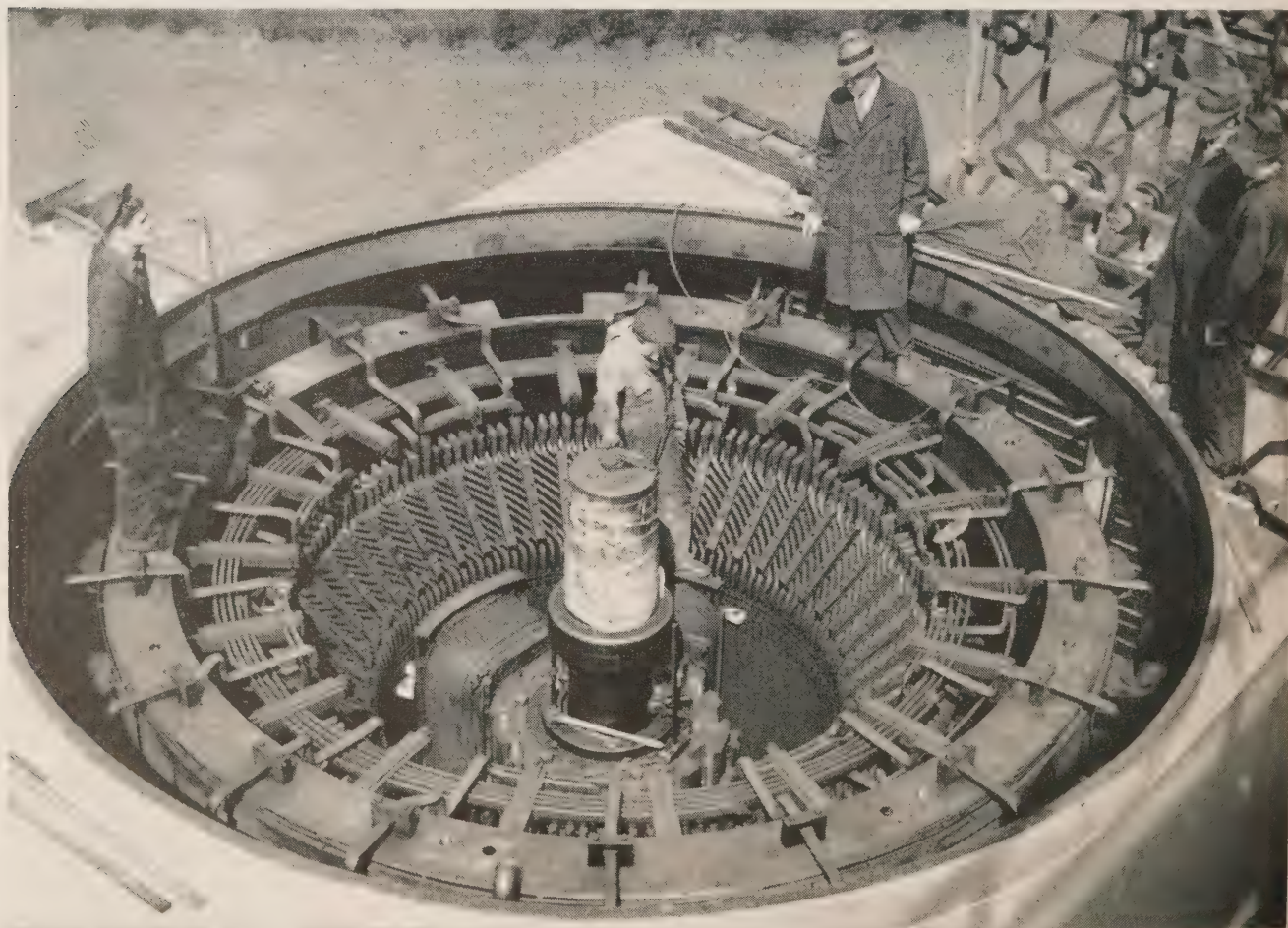
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**Overhauling Eighty-Ton Condenser Is
Prodigious Task — No Time Be-
ing Lost In Getting Old War
Horse Back Into Action**
•

By John A. Murphy,
Hydro News

many routine check-ups had to be sacrificed to the greater need of keeping production lines rolling. For this reason, the complete overhaul, which each condenser would normally receive every four years, was temporarily suspended. Instead the units were inactive for brief periods on week-ends for routine inspections and essential minor repairs.

Upon the cessation of hostilities in 1945, however, the normal procedure was resumed, one of the condensers being dismantled and thoroughly overhauled in each of the subsequent years up to the present. Rather paradoxically, the final unit to be taken out of service was Number One Condenser which had been in continuous service since 1937, except for the previously mentioned weekend shut downs. During this extended period the operating staff reported no difficulties of other than a minor nature. This despite the fact that a load of 30,000 kv-a was being carried—a twenty percent overload. So it is readily apparent that "Old Number One" has earned its

(Continued on page 28)



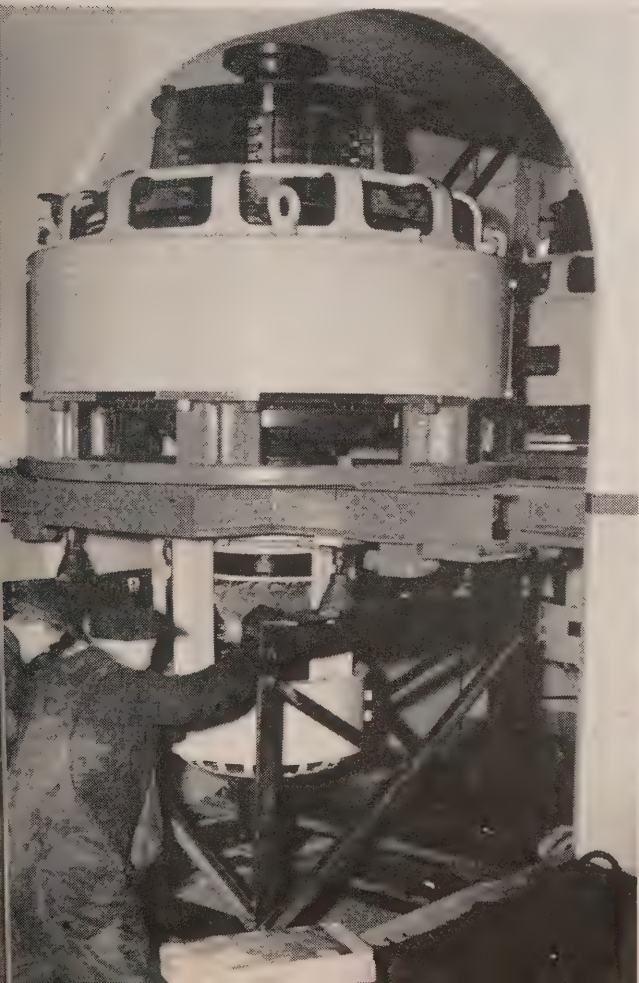
THIS IS how the interior of the condenser looks to the crane operator as he maneuvers into position. Three of the six poles have been lifted out and preparations are under way for removal of another.



ABOVE, GREAT care is observed in easing the field coil clear of the rotor.

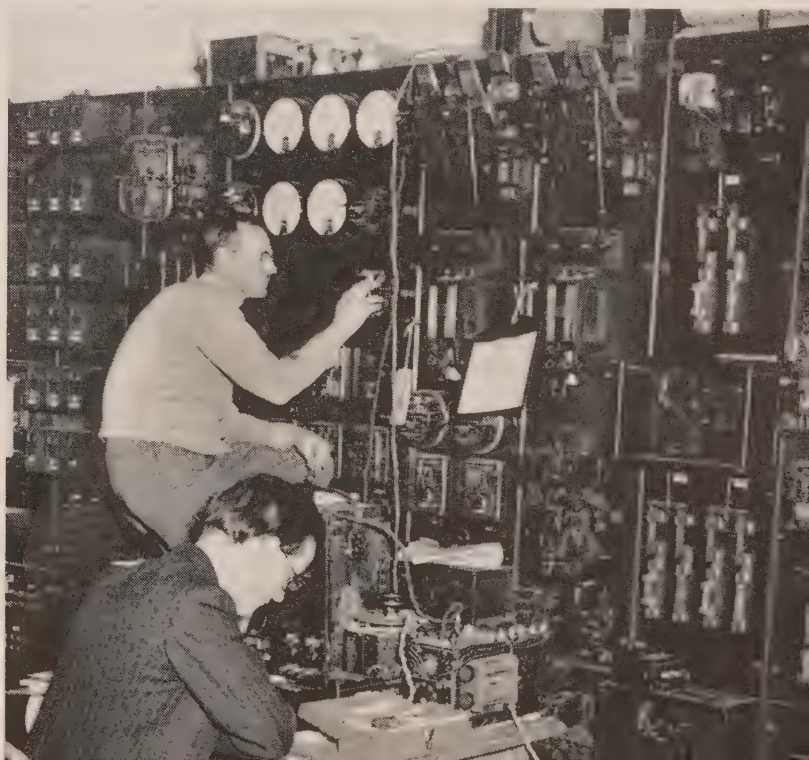


RIGHT, LAST minute adjustments are made prior to loading on a waiting truck.



LEFT, THE main and pilot exciters are moved clear of the main unit for dismantling and overhaul.

BELOW, IN the condenser room technicians overhaul and calibrate relays.



TEAMPLAY KEYNOTE

(Continued from page 20)

it was recognized by the biggest organizations in America that their greatest assets were not their machines and their technological processes but the men and women who were employed to direct them. And this applied also to purely manual labour jobs. Human problems today could not, he said, be thrust to one side. They had to be confronted and dealt with. He appealed for a type of leadership that while insistent upon work being properly carried out was also friendly and encouraging. A mark of real leadership was the faculty for putting oneself in the other fellow's place. There was no room in Hydro for slackers, but men, he believed, might be inhibited from throwing their whole weight into a job by the feeling that they were regarded as merely cogs in a machine and that little attention was given to their needs and aspirations as human beings.

Another mark of real leadership, the speaker said, was the sense of responsibility for the men who were working under one. When machines ran down, they were not thrown out if they could be satisfactorily repaired, and he thought more attention should be given to human rehabilitation. Restoration of a man to a pride of workmanship and self respect, although it might require a little patience, was certainly as important, he thought, as the repair of machinery.

In more humorous vein, Mr. Dibblee referred to the subject upon which he had been invited to speak—"The New Look."

"I think," he laughed, "that means that we should all take a good look at ourselves before we turn to see how the other fellow is wearing it."

Health—A Positive Factor

Dr. R. W. I. Urquhart, Chief Medical Officer of the Commission, discussed the role of the physician in modern industry. A primary consideration today, he pointed out, was the preservation of the health of everyone in an organization from Management to the humblest employee. Health, he said, was to be regarded as a positive thing, enabling a man to exercise his maximum powers at his job, and not merely as an absence of disease. Apart from periodic examinations and check-ups, it was the duty of the medical man to see that the working environment contributed to this objective. This meant that in a wide-spread organization like Hydro, with construction camps scattered all over the province, the co-operation of local superintendents and resident engineers was essential. Regular reports were important so that the medical man could keep in constant touch with conditions

that might require his professional advice and attention.

Dr. Urquhart defined the responsibilities of his department in both organized and unorganized territories. He drew attention to the necessity for camps being laid out with the most adequate provision for sanitation and urged that especial care be exercised with regard to the drinking water.

Instructive Addresses

At the morning session—E. R. Knowlton, Station Construction Superintendent for the Hamilton area, presiding—G. A.



TO FACILITATE the payment of men on Hydro's major construction jobs embossed addressograph plates are now made up for each individual and the cheques issued by the Payroll Branch on the spot. G. A. Honsberger, Assistant Chief Accountant of the Commission is explaining the new system to an audience of construction men.

Honsberger, Assistant Chief Accountant of the Commission, discussed the new payroll forms for field workers, and demonstrated how these provided a smoother-working and more efficient system. A. A. Richardson, General Superintendent at the Des Joachims development, addressed himself to a review of the problems of the superintendent in the construction field. A. L. Malcolm, Chief Engineer at Des Joachims, described the detailed survey work required before and during construction. A. T. Clark, Plant Engineer, Toronto, showed how important past records were in arriving at estimates of the cost of new construction. And Chester Jones, Superintendent at Ear Falls, gave verisimilitude to the dictum of Napoleon that "every soldier has

OLD NUMBER ONE

(Continued from page 26)

vacation.

From six to eight weeks are required to complete the overhaul. To give eighty tons of metal and machinery a bath requires a delicate combination of muscle and machinery. The parts range in size from the rotor and bearings, weighing thirty-two tons, to the 82 minute carbon brushes on the pilot exciter which tip the scales at two ounces each. The implements used run from a Gantry crane to a pair of tweezers.

Unit Re-Aligned And Balanced

By means of the crane, the six poles or field coils are lifted from the rotor. Each of these poles weighs in excess of eight tons so that the procedure is not a simple one. The check consists of cleaning and painting the field and stator coils, tightening the bracing of the stator coils, checking the dowels, inspection and cleaning of bearings and realignment and balancing of the unit as a whole.

The actual cleaning process is, by all standards, a thorough one. Rough surfaces are first brushed then cleaned with Varsol. After the stator coils have received this treatment the air vents are blown out with compressed air to remove all particles of carbon dust and dirt. The stator compartments are also subjected to a vacuum cleaning. Baffle plates and deck plates are cleaned with a steam "jenny" and then spray painted.

Eight-Week Deadline

With the heavy existing demand for power no time can be lost in completing the job and getting the old war-horse back into action. To ensure meeting the eight-week deadline the Leaside maintenance crew are working double shifts. With the one unit inactive, the strain on the remaining three, still carrying a twenty percent overload, is just that much greater. In the event of one of these running into difficulty, a substantial drop in voltage would result, or as one engineer remarked: "The lights would get dim and stay that way."

The fact that the lights don't get dim is due to two main factors: the ability of well-built but overworked equipment to "take it" under the toughest conditions, and the unceasing diligence of Hydro's operating and maintenance crews in coping with unforeseen emergencies with a minimum of inconvenience to the consumer.

a marshal's baton in his knapsack" by telling the story, replete with anecdote, of his rise from "waterboy" to his present responsible position.



Hydro

HOME FORUM

by Edith Emma Muir

HOME ECONOMIST

Robins and Wake-Robins remind all and sundry that it's April in Ontario. Robins are those red plush breasted birds whose male species hop about on lawns and fence posts. They migrate ahead of their mates and then call lustily until they find them.

* * *

Wake-Robins or White Trilliums are the flowers blossoming among our woods at this time of year. It should not be used as a cut flower since the bloom cannot be picked without taking the foliage which is needed to develop the bulbous root for next season's bloom. As recently as 1937, the Ontario Horticultural Association recommended the Wake-Robin as our provincial floral emblem.

* * *

The first extra basket of asparagus was canned, which is quite a treat after the sad experience of being without any green coloured vegetables for four wintry months. Asparagus was thoroughly cleaned, sorted for size, packed in scrubbed pint jars and partially sealed with $\frac{1}{2}$ cup water and 1 tsp. salt in each. Placed on the rack in the pressure cooker, we poured in 1 cup of water and timed the canning process when the weight indicated 15 lbs. pressure. Time: 30 minutes.

* * *

Fresh boiled asparagus on toast and a poached egg on top of it makes a tasty luncheon dish . . . No style, but good value.

* * *

Rhubarb can be cooked to look attractive, or most unattractive. Cut with sharp knife and put pieces in the top of double boiler with $\frac{1}{2}$ cup water and the sugar (about 1 cup for 5 cups rhubarb). Cook over hot water until tender, but not more than 20 mins. to retain shape.

* * *

A good cheese sauce has the texture of cream, the colour of a buttercup and the flavour of cheese. This requires plenty of good strong cheese.

CHEESE SOUFFLE

1. In the top of double boiler, melt 4 tbsps. butter; add 4 tbsps. flour, stirring until smooth. Slowly stir in $\frac{1}{2}$ cups warm milk, 1 tsp. salt and a dash of cayenne pepper.
2. Cook, stirring until thickened. Slice in $\frac{1}{2}$ lb. old cheese and stir until melted. Remove from electric element.
3. Separate 6 eggs, putting whites in large bowl. Beat egg yolks with a fork until well blended. Pour a little hot cheese sauce into them, then slowly add egg-yolk mixture to the rest of the cheese sauce in the double boiler, stirring constantly.
4. Beat egg whites until they are stiff but not dry—that is until the egg-white foam stands up in peaks that fold over slightly when the beater is lifted out of them.
5. Slowly pour the cheese sauce onto the beaten whites, while folding. To fold, pass the spoon down through the whites, across the bottom of the bowl, bring up some of the mixture, place it on top. Repeat this folding until there are no more large areas of egg white.
6. Turn the soufflé mixture into an ungreased 2-quart casserole, to within $\frac{1}{4}$ inch of the top. An ungreased casserole helps the soufflé hold its full height.
7. Now, with a teaspoon make a shallow path, about 1 inch from the edge of the casserole all the way around the mixture and carefully drop it in the centre. This will help to make a crown effect.
8. Place the soufflé in central position in preheated electric oven of 300 degrees. Bake it for 1 hr. and 15 mins. Do not peek at it. Transfer it quickly from oven to table as the family sit down at the table.

A soufflé is tricky—A perfect one gives you A-1 credit.

Never neglect to put a little lemon peel in rice pudding. It adds that certain something for a satisfying dessert.

* * *

The plum trees will soon be loaded with blossoms, which reminds me of plum tarts. Use canned plums, cook them down to a mush, put through a sieve, add a little sugar, fill tarts, put on tops, and bake. Serve with cream.

* * *

Trout season opens soon. Can't see any reason why women who know the face of the clock and how to tie knots should be left at home. It's a wonderful sport—to fly catch trout.

* * *

Our first picnic will consist of fresh trout fried in butter, potato chips, carrot sticks and buns, steeped coffee and apple dumplings.

* * *

Lemon pie filling which became syrupy after crust was filled has puzzled our office worker. One reason could be that it was not cooked sufficiently. It would partially congeal when cool, then when placed in warm oven to cook meringue, it would thin out again.

* * *

After the middle of April, a packaged gelatine pie filling with a true lemon flavouring will be on the market. You will want to have a supply for cake fillings, icebox cakes and to fill cream puffs, as well as pie and tart shells.

* * *

There was a time when sulphur and molasses was the spring tonic spooned out by grandma. Today we look for the delicate greens such as watercress and celery, to add more "iron" to our diet.

* * *

Broil a round steak? NEVER! You brown pieces of round steak on either side. Add tomato juice or a cup of water, cover and simmer on electric element or in a moderate oven. Allow 40 minutes per pound, cooking time.

MEET THE MAN

(Continued from page 2)

during the war. Commander of the British Empire! It seems to "fit" so well.

That is one part of Mr. Saunders' dual personality—the man of the silk of the King's Counsel, the Commander of the British Empire, the man who can meet and talk with kings, statesmen and world celebrities—the man who now directs the destiny of one of the greatest public ownership enterprises in the world.

Then there is the other Saunders—the man who can give and take with the bustling street corner newsboy and quick-witted politician, the man who can swing into construction camps and talk the language of the rugged construction men.

Perhaps, he might be regarded as more than a dual personality for there is still another and all-important side to his nature. This is Saunders—the proud husband and father—the man who loves to roll up his sleeves, pull on an apron and go to work on a favourite recipe in the kitchen.

When Hydro News questioned Mr. Saunders concerning his reputation as a

cook, he looked us straight in the eye and said with all the emphasis of a deep, deliberate voice: "Certainly, I cook frequently."

For a moment, we felt just a little abashed at having even questioned the Chairman's reputation in the culinary field.

"I might add,"—this time the emphasis shifted up to the baritone level and there was the puckish twinkle in his eyes—"that I am a cook, not only by reputation, but that people will actually eat the food I prepare."

"What is your specialty?" we asked.

A Recipe For Dressing

At this point, the Chairman leaned back in his chair and the finger tips of each hand came together in a gesture one immediately associates with a connoisseur. As he spoke we could almost detect an ecstatic note in his voice.

"My favourite dish is . . . any type of fowl . . .," mused Mr. Saunders, (and speeding up) "Folks also enjoy eating the dressing I serve with the fowl. This, of course, is an old fashioned recipe to be used with chicken or turkey."

At this point, we are pausing briefly while the Hydro Home Economist and all Hydro homemakers gather round and

get this tip on dressing (for the chicken or turkey) straight from the Chairman . . .

And now, here is the recipe in his own words. QUOTE: Cut up the required amount of bread (not too fresh) into small cubes; add onions to taste; then add salt, pepper, sage, savory, poultry dressing and thyme; complete with a dab of butter . . . Mmmmm. Mmmmm. For goose forget the butter. UNQUOTE.

While he can handle all types of roasts and other dishes, he reluctantly admits he can not claim any ability so far as pastry is concerned.

The question of sports was next raised in the interview. We had noted from the official biography that Mr. Saunders had played rugby when at Oakwood Collegiate, that he had paddled with the Toronto Canoe Club and that he had coached that club and had acted as an official at regattas from 1931 until 1938. The Chairman would have one believe that he played "left outside" so far as rugby is concerned and that he provided "good ballast" in paddling contests. He has not yet taken up lawn bowling or chess, but does play bridge, cribbage and euchre and he'll never miss a hockey game if he can help it.

Golf? No, the Chairman has not been



INDICATING THAT he is literally "digging in" as Chairman of the Commission, Robert H. Saunders, C.B.E., K.C., performs the initial spade work for a new service building to be erected on the parking area behind the Commission's present Administration Building on University Avenue in Toronto. Members of the Commission, left to right, W. Ross Strike, K.C., Second Vice-Chairman; R. L. Hearn, General Manager and Chief Engineer; A. W. Manby, Assistant General Manager—Administration, Dr. Otto Holden, Assistant General Manager—Engineering, and Hon. G. H. Challies, First Vice-Chairman, as well as E. B. Easson, Acting Secretary, are in attendance at the ceremony.

able to find time to play golf since about 1941. When he played at Uplands, he was turning in score cards of 110 to 115.

Sold Clubs To Buy Pony

There is an interesting little story about the Chairman and golf. It appears that he had a matched set of clubs and that a friend was trying to buy them when Mr. Saunders gave up the game. Just about the same time the Chairman's beautiful daughter, Mardi, who was then eight years of age, wanted to get a pony. The upshot was that Mr. Saunders sold his clubs and used the money to buy the pony. Next, the question arose as to how the pony could be transported from Toronto to Mr. Saunders' summer cottage at Gamebridge near Beaverton. He was unable to get a truck and so, with characteristic resourcefulness, he took the back seat out of his two-door sedan and the pony was driven to the summer cottage. Eventually, he says, he and his wife and daughter got rather fed up by playing nursemaid to a pony and so the animal was given away.

The new Chairman does not make any claim to being an outstanding fisherman. Although he has often fished in front of his cottage at Lake Simcoe and got quite a few 4½-pound bass. He says he does most of his fishing at a local departmental store and in the winter months he'll often go up to Lake Simcoe, watch the boys fishing through the ice and then do his own "fishing" at a store at Jackson's Point where, he says, he has "caught" some very fine white fish.

When Mr. Saunders was asked if he recalled his first job in life, he quickly replied: "I certainly do—selling newspapers at Spadina and College Streets, Yonge Street and St. Clair Avenue and at Yonge Street and Farnham Avenue.

Our next question was: "Mr. Saunders, in what part of Toronto were you born and is the house still standing?"

"At 68 Lippincott Street," he shot back. "The house is still standing. After all, I am still a young man!"

Doesn't Forget Dates

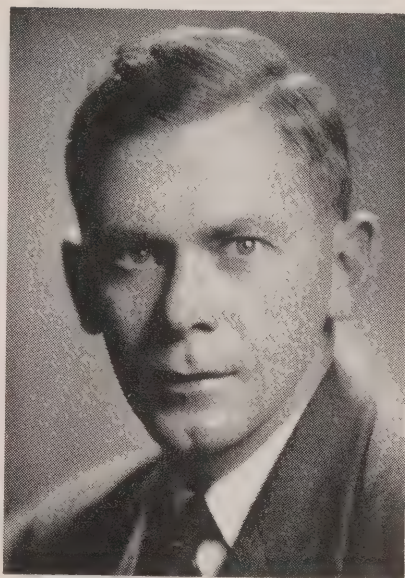
The new Chairman is the kind of man who doesn't forget dates, especially so far as his wife and daughter are concerned. It seems only like yesterday since that happy day—September 3, 1930—when he and the former Marjorie Fullerton Rennie of Peel County were married in Toronto.

His wife's birthday?

Well, like her husband, she is still quite young and, indeed, also very charming. But, to come back to the birthday, on Sunday, October 3, Mr. Saunders will be wishing his wife happy returns in the good old-fashioned way.

When you think of the Saunders' family you can not overlook July 26,

HYDRO TREASURER



Appointment of Frederic R. Brebner as Treasurer of The Hydro-Electric Power Commission of Ontario was announced by the Commission on April 16 to take effect immediately.

Mr. Brebner succeeds John V. Walters, who relinquished that position recently to assume important duties with the Bank of Montreal. The new Treasurer is widely known in financial circles and was Vice-President of W. C. Harris and Company, Limited, Toronto.

Born in Toronto, Mr. Brebner attended University of Toronto Schools and graduated from the University of Toronto in 1931 with the degree of Bachelor of Commerce. He was identified with the R.C.N.V.R. from 1941 until 1945 and was Commanding Officer of H.M.C.S. Forest Hill at the time of his retirement. Actively identified with the Toronto Branch of the Naval Officers' Association of Canada, Mr. Brebner, who is 39 years old, is President of that organization.

1933. On that day Mr. Saunders was a very proud and happy man for his wife presented him with a lovely baby girl, Marjorie Jane whom he called Mardi, a name by which he affectionately addressed his wife.

There is one thing that seems very certain, "Bob" Saunders will always retain a warm place in his heart for "good old Ward Four." It was on January 1, 1935, when he was first elected as Alderman for that Ward, heading the poll with 4,772 votes. He served the people of that area for four years as an Alderman in City Council. The year 1941 saw him take his place on the Board of Control, and on his fourth consecutive term as Controller he headed

the poll with a record vote which has been beaten only once in the history of Toronto.

Mr. Saunders first occupied the Mayor's chair in the year 1945. It might be mentioned at this point that the most memorable and thrilling experiences in his life were getting married, the birth of his daughter and being sworn in as Mayor.

This man who was elected four times as Alderman, four times as Controller and four times as Mayor and who is now Chairman of The Hydro-Electric Power Commission of Ontario, says that "work and more work plus cooking" is his principal hobby in life.

For some reason, he says, he is unable to smoke. When questioned on this subject, he remarked: "I believe I would enjoy smoking a pipe or cigar, but any time I tried even a cigarette I almost coughed my head off—and I value my head."

When it comes to colours the new Chairman has a very decided preference for blue.

"How does it feel," we asked, "to be Chairman of an organization which is likely to become the largest in Canada from the point of capital investment?"

Proud of Organization

Mr. Saunders thought for a minute and then replied: "You left out the most important feature of the organization, and that is, in my opinion, it is the greatest single economic factor in the future development of this Province, and, yes, of this country. It is a great honour to sit as Chairman, and each day that passes shows me more reason to be proud of the organization and its staff."

Asked if he had a message for Hydro folk at this time, the Chairman said: "I think the message can be summed up in this way: If everyone, including municipal Hydro Commissions and their employees, as well as consumers, throughout Ontario will give us their full co-operation, nothing will be able to stop the advance of this Province."

In making reference again to the official biographical record one finds that the new Chairman is a descendant of United Empire Loyalists, that he is a member of the Granite Club, Toronto Canoe Club, National Yacht Club, Lion's Club, Optimists Club, Good Fellowship Club, and Royal Canadian Yacht Club, while he is Past Master of Elgin LOL and Past Master of Coronati Lodge, A. F. & A.M. He is also a member of the Board of Managers of St. Columba United Church.

At the close of an interview with Mr. Saunders, you leave the room feeling that he is a man who certainly knows "what's cooking," any way you want to take it.



TWO HUNDRED Hydro "Construction" men united in good fellowship around the festive board

WALLACEBURG

(Continued from page 10)

net cost per kilowatt-hour is 1.52 cents.

A quick glance at Wallaceburg will tell you that it is geared for heavy manufacturing. In fact the residents are proud to identify it as the "working-man's mecca."

Modern Industries

Outside of lumbering, the first modern industry was established by the late D. A. Gordon, M.P., and was known as the Sydenham Glass Company. A few years later, along came the Dominion Sugar Company. At present, the roster of industry includes such names as the Wallaceburg Glass Company, Schultz Die Casting Company, Benn Iron Foundry, Hawken Milling Company, Canada and Dominion Sugar Company Limited, Sydenham Trading Company, H. J. Heinz, Greenmilk Company, National Pressure Cooker Company, Gordon Manufacturing Company Limited and Garden Valley Foods.

The town, of course, is supported by the usual secondary industries such as machine shops, lumber mills and other concerns which act as supply feeders for the major plants.

The local Hydro building might be described as a seat of education in Wallaceburg. Equipped with a good store room, offices and showroom, it was built with the idea of having a civic auditorium on the second floor. However, when the

public school became crowded, the upper part of the Hydro building was pressed into service to provide two classrooms. The visit of the circuit singing teacher coincided with the visit of Hydro News so the classes favoured us with some two part songs.

To the visitor, the most surprising fact is to learn that this inland Ontario town possesses a fine harbour which accommodates Great Lakes shipping. The turning basin is right in the heart of the town and from a distance it is startling to see a huge freighter apparently sailing up the "main drag."

Also serving the industrial transportation of the town is the Pere Marquette Railway operated between Chatham and Sarnia, both about 25 miles away. These terminals link up with the Canadian

National and Canadian Pacific Railways respectively.

Water Works System

The water works system, which was originally installed in 1915, has its source of supply about $4\frac{1}{2}$ miles out of town on the Channel Ecarte. Just four years ago the entire system was modernized, a new electric pumping system having been installed. The system can supply over four million gallons of water daily for the town's use.

The Wallaceburg News, the local paper, was founded some fifty-two years ago by the late William Calwell, and eight years later it was taken over by his two sons, George and Charles. Today the third generation of Calwells are putting out this weekly which carries from two to sixteen pages which feature many sports activities.

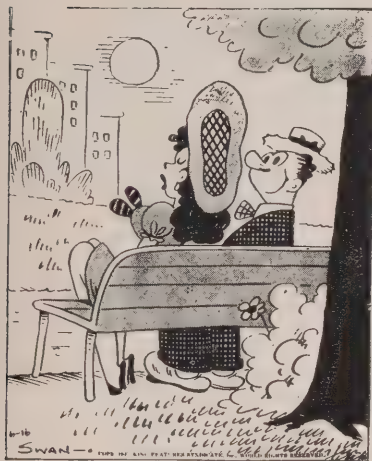
Just as the visitor is amazed at seeing boats in the middle of the town, he is also impressed with the fact that everybody in town is busy. With the volume of business handled, the six thousand residents feel that they are depression-proof as there have been few unemployment problems. Wages are good and there is a sense of well-being in every home.

The affairs of the Wallaceburg Hydro Electric System are ably administered by A. G. Gilhuly, Chairman; Mayor J. E. MacDonald and J. D. Hawken, Commissioner; with A. D. Stewart as Manager and Miss Ila M. Taylor as Secretary.

LEASE NORTH BAY SITE FOR REGIONAL OFFICE

The Commission has leased the first two floors and basement of the El Carmen Building in North Bay for the Regional Office of the Northeastern Region. The Northeastern Region includes all of Northern Ontario east of Sault Ste. Marie and north to James Bay. It is anticipated that this Regional Office will be moved from Toronto to North Bay between May 15 and June 1.

Lighter Lines



"No, stealing that kiss wasn't petty-larceny, Hazel—that was **GRAND larceny!**"

A truly eloquent parson had been preaching for an hour or so on the immortality of the soul.

"I looked at the mountains," he said, "and I could not help thinking, 'beautiful as you are, you will be destroyed, while my soul will not.' I gazed upon the ocean and cried, 'Mighty as you are, you will eventually dry up, but not I!'"



"Junior just said his first word!"

An Irishman got out of a coach at a railway station for a sandwich and coffee, but the train left before he had finished his repast.

"Hould on!" cried Pat as he raced along, "hould on, ye murthen ould stame ingin—ye've got a passenger on board that's left behind."

"Michael," asked the priest, "how much hay did you steal?"

"Well I may as well confess to your riv'rince for the whole stack, because I'm going after the rest tonight."

An Arab was taken in a car across a very bumpy section of the desert. So bad was the going that at last the car overturned and the Arab was thrown out. Instead of turning in anger on the driver, he picked himself up and with an apologetic air said: "I haven't learned to ride one of these things yet."

Three slightly deaf men were motor-ing from the north of London in an old rattletrap of a car, which made hearing difficult. As they were nearing London, one asked:

Tom: "Is this Wembly?"

Harry: "No, Thursday."

Bill: "So am I. Let's stop and have one."

It would go a long way toward solving the traffic problem if street cars would travel as fast when you are riding in them as they do when you are dashing along the street in the morning trying to catch one.

"Is the Doctor in?"

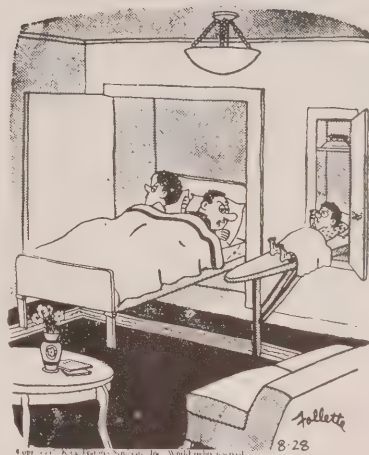
"No, he isn't."

"Do you know when he'll be back?"

"I really can't say—he went out on an eternity case."

The rung of a ladder was never meant to rest upon, but only to hold a man's foot long enough to enable him to put the other somewhat higher—Thomas Huxley.

A sure-footed animal is an animal that when it kicks it doesn't miss.



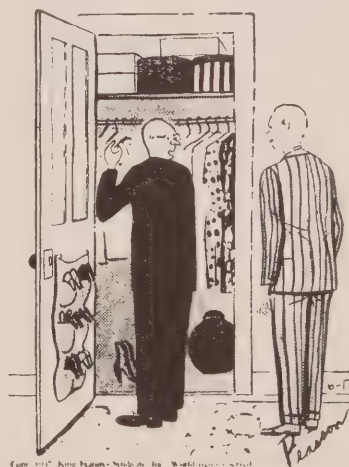
"All right, now you've GOT an in-a-door bed like Papa and Mama—now go to sleep!"

A negro evangelist shouted to his audience, "Come up and jine de army ob de Lord!"

"I'se done jined," replied one woman. "Whar'd yo' jine?" asked the evangelist.

"In de Baptis' church."

"Why, chile," said the evangelist, "yo' ain't in de army ob de Lord, yo's in de navy."



"My wife has her closet and we have mine!"



It's... smart to play safe!

TEACHERS . . . PARENTS . . . CHILDREN . . . real danger threatens children who play too close to Hydro lines and transformer stations. A kite catches in the wires and someone is tempted to climb a pole after it . . . or a ball goes over a Hydro fence, and some adventurous lad undertakes to get it back. Too often such missions result in contact with a live wire . . . and that means severe burns that may well prove fatal.

The only safe way is to keep clear of Hydro wires and installations.

Hydro takes every possible safety precaution; but once in a while someone gets careless or takes a chance, and injury results. Hydro can only warn, and seek co-operation of parents and teachers and all who have influence with those who might expose themselves to danger.

Children should be warned:

- Never to fly kites near Hydro wires.
- Never to climb poles.
- Always to stay away from distribution lines and transformer stations.
- Always to keep away from fallen wires.
- Not to break street lamps . . . they are for public safety.
- Not to break insulators . . . a broken insulator can cause loss of service and heavy damage.



After all, "Safety First" is still a good motto. It's smart to play safe.

DON'T BREAK
STREET LAMPS

THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

HYDRO! News



"THE FALLS"



HAPPY HOLIDAYS!

The lakes and streams and forests of holiday land are yours to enjoy . . . and yours to protect from their greatest enemy, fire.

Most forest fires are started by human beings. Thousands of acres are blackened and destroyed every year because someone was not careful with fire.

When you use a match, break it in two before you throw it away. Be sure your discarded cigarette is out too.

When you make a campfire, build it small and in a safe place.

When you leave, put the fire dead out with water.

What forests do for you:

- Give you a grand place to holiday.
- Provide beauty spots for our visitors.
- Shelter game animals and fishing haunts.
- Control flow of water . . . help even the flow of rivers so they do not dry up in summer.
- Help to ensure a year-round supply of Hydro power for you.
- Provide thousands of jobs in lumber, pulp wood and other forest industries.
- Influence climate so as to prevent extremes.

Enjoy your Holidays but protect our Forests

THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO





THE HYDRO - ELECTRIC POWER COMMISSION OF ONTARIO
620 UNIVERSITY AVENUE, TORONTO

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THE FRONT COVER



EVERY year thousands of tour-
ists and honeymoon couples
make their way to Niagara Falls
—a world-famous Canadian land-
mark which, in the minds of
many people, is also synonymous
with Hydro in Ontario. This
month's front cover picture, taken
by Hydro News' photographer
Burt Helling, accentuates the
arresting beauty and majesty of
"The Falls".

Volume 35

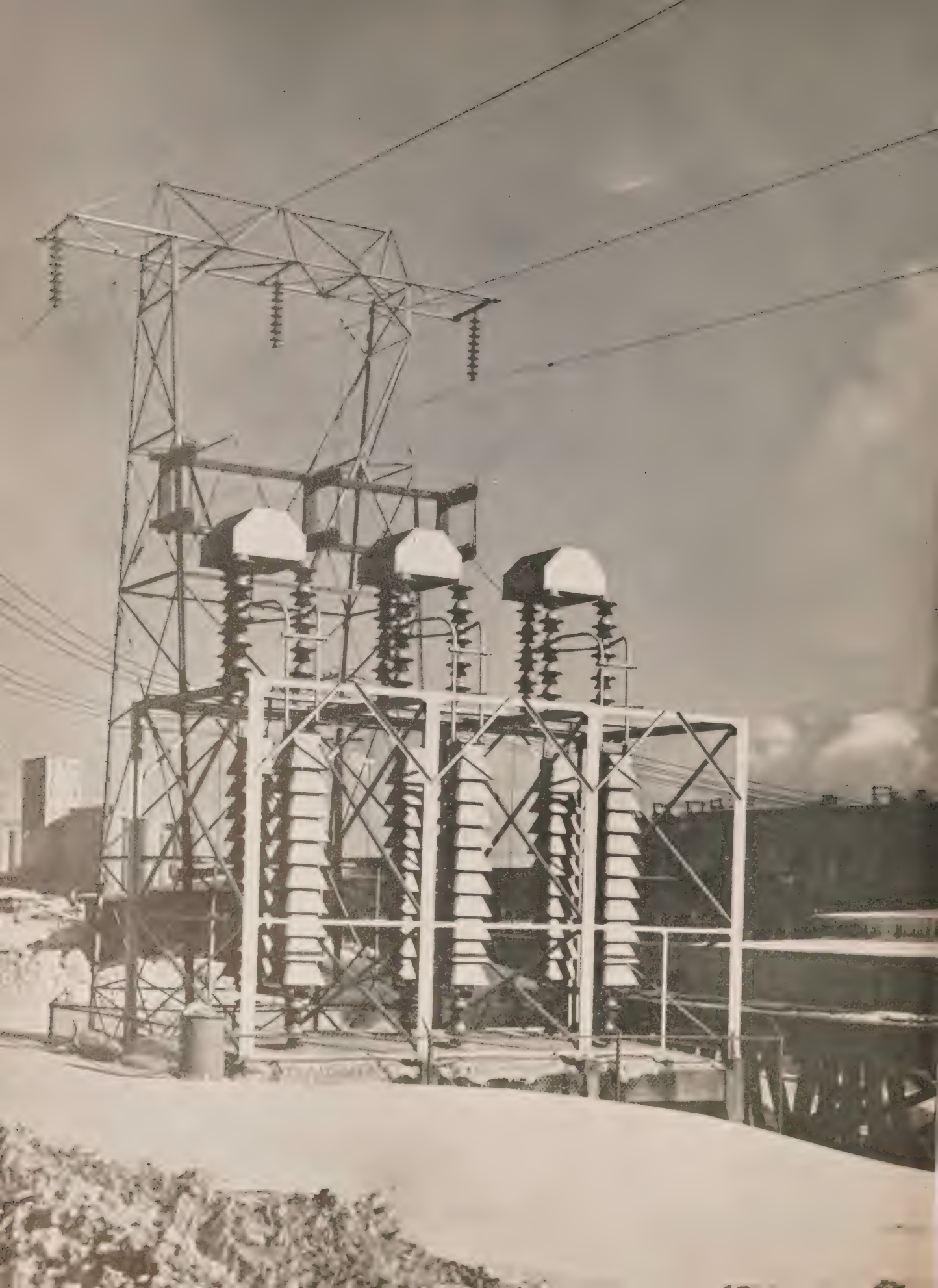
June, 1948

Number 6

CONTENTS

	Page
Lightning Arresters - - - - -	2
Page Three - - - - -	3
Out Of The Woods - - - - -	4
Hydro's Ultrasonic Eye - - - - -	10
Flying Visit To Porcupine Club - - - - -	12
Stewartville Nearing Completion - - - - -	14
Twin Cities In The Spotlight - - - - -	18
N.Y. Authority And Hydro Discuss St. Lawrence	24
Hydro Home Forum - - - - -	27
Dr. R. W. I. Urquhart's Page - - - - -	28
This And That - - - - -	29
Hydro At Work - - - - -	31
Monthly Load Summary - - - - -	31
Municipal Loads - - - - -	32





* Page Three *

ST. LAWRENCE POWER

In directing the State Power Authority to seek federal approval of a proposed agreement with the Province of Ontario with regard to waterpower development on the St. Lawrence river, Governor Thomas E. Dewey of New York has again drawn attention to the vast power resource which lies unharnessed in the Long Sault rapids. The electric energy which could be developed from this "tumult of waters" has been conservatively estimated at a million and a half kilowatts—approximately 2,000,000 horsepower.

It is pointed out that a hydro-electric development of the nature contemplated could be carried out independently of the much-debated St. Lawrence Seaway project, while fitting into the general over-all plan if this larger undertaking were decided upon. Moreover, its manifest advantages stand clearly on their own ground.

From reports published in the press, it appears that Mr. Dewey's action was deemed necessary because the Empire State requires additional supplies of electric power. Much the same condition exists in Ontario. It is true that the tremendous program of development upon which The Hydro-Electric Power Commission of Ontario is now engaged will add about 50 percent to the Commission's existing sources of generated power. There are indications, however, that, in the not very distant future, a good deal more power will be required to meet the needs of all classes of consumers especially in the heavily industrialized areas of Southern Ontario.

Considering the increasing demands of industry and the necessity for continually improving the standards of living—a process to which the people on both sides of the border have become so accustomed as to make a backward step unthinkable—it is difficult to see how any valid argument could be raised against the proposed St. Lawrence power development. It is estimated that the undertaking envisaged will take at least five years to complete. It would, therefore, seem the part of wisdom to begin it as soon as possible.

SUMMER REFLECTIONS

" . . . And what is so rare as a day in June? Then, if ever, come perfect days;"—J. R. Lowell.


These lines are familiar to anyone who has studied English literature in the public schools of Ontario, but, they have more than an academic significance for many of us. For June is the magic month when summer is born and the man in the street is heard to declare "It's good to be alive!"

This feeling of "joie de vivre" is engendered by Mother Nature herself. For it is in June when she decks the countryside with the velvet of the peony and the delicate shades of the rose. The fragrant air is filled with the busy humming of bees and the wind is soft and warm.

During the beautiful days of June the blood grows restless and our thoughts turn to the open field and the deep forest where we spent many happy hours of our childhood. Who, among us, cannot recall the feeling of anticipation we experienced when someone yelled 'School is out!?' Then we could put away our books and forget about studies for two full months.

Even as we grow older, June still inspires a feeling of joyful expectancy. It is the month of romance when the bride and groom plight their troth with confidence and hope in the future. In fact there are few who do not regard June as the doorway to adventure. Vacations are not far away and each in his own heart is hopeful that some new and wonderful experience lies ahead.

And speaking about June, this month will see the second of the Commission's post-war development projects placed in operation. At the time of writing, Hydro is putting the "finishing touches" to an additional unit at its Ear Falls generating station, located on the English River in the Central Patricia mining area of Northwestern Ontario. This plant supplies power for several mining properties, townsites and paper mills in this district. The 7,500-horsepower generating unit now being placed in operation will bring the total capacity of the plant up to 18,750 kilowatts (25,000 hp), and provide sufficient power for further expansion in this section of the province.

 **LIGHTNING ARRESTERS** outside the plant of the Great Lakes Paper Company Limited at Fort William. This 110 kv equipment is designed to protect the company's bank of transformers. These transformers step down the 110,000 volt current to 2,300 volts. Power for use in this plant comes from the Commission's Cameron Falls development



by
Harry M. Blake
 Hydro News

TOTAL production of Canadian newsprint mills last year reached an all-time record of 4,446,789 tons. Surveys conducted by The Newsprint Association of Canada show that this was nearly two and a half times the combined output of the United States, Britain, Sweden, Norway and Finland. Allowing for variations of weight in the newsprint used by different newspapers, Canadian production in 1947, if extended in one continuous news sheet 23½ inches wide from upper to lower margin, would just about span the distance between the earth and the sun at the mean distance of that luminary from our planet.

Only one additional newsprint mill is reported to have been built in the Dominion in 1947, so that this astronomical achievement of the Canadian industry may be credited almost entirely to the modernization of machinery and machine processes. The installation of electrical equipment not only for machine drives but for the control and regulation of almost every mill operation has tremendously speeded up production. The vital role that electricity plays in the great newsprint industry can, however, be fully appreciated only by a visit to the mills, and Hydro News was quick to avail itself of invitations to tour representative Ontario plants.

The first call was made at Thorold in the Welland district. Here the Ontario Paper Company maintains its head office and operates its largest mill. Production of newsprint began in 1913, and there

are now five paper machines installed, with an annual capacity of 165,000 tons.

Pulpwood for the Thorold plant was first purchased in the open market, but in 1915 the company began to acquire timber lands of its own first on the north shore of the St. Lawrence river and later in the Lake Superior district. As these areas were developed, pulpwood stations were established with extensive fluming, barking and loading facilities. At Heron Bay on the north shore of Lake Superior a complete townsite was laid out at a cost of \$1,000,000, and the period of biggest expansion between the two world wars was rounded out by a \$20,000,000 project, which included the building of the company's second largest newsprint mill and the construction of a "colony" town at Baie Comeau on the Gulf of St. Lawrence.

Recent Improvements

In 1945 a further program of construction and modernization was embarked upon, involving an expenditure to date of approximately \$4,500,000. Improvements already effected include new electrical installations at the Thorold mill, new electrical equipment for the industrial alcohol plant located there and the erection of new dry pulp producing plants at both Thorold and Baie Comeau, which will enable the company to produce 43,000 tons of sulphite and 14,000 tons of groundwood pulp per annum for the

United States market. In addition, a new headquarters' building has been constructed at Thorold on spacious, modern lines, affording cafeteria, rest and recreational facilities for some 1,300 employees.

To transport pulpwood from loading points to the Thorold mill, the company some years ago established a subsidiary—the Quebec and Ontario Transportation Company. This marine enterprise has since vastly widened the scope of its activities and six large vessels now ply the Great Lakes and Atlantic coastal waters, carrying newsprint from Thorold to Chicago and New York and bringing back coal, sulphur and other supplies. Supplementing this service, a considerable number of privately-owned river, lake and ocean-going craft are chartered to meet the company's growing transport and tonnage requirements.

Through arrangements made by James E. Vallillee, Director of Industrial Relations for the Company, W. L. Eliason, Chief Electrical Engineer, accompanied the Hydro News party on its tour of the Thorold mill.

Power Load Demands

Hydro power comes in over a 110,000-volt line from Queenston to the Commission's Allanburg transformer station, whence it is transmitted to the Ontario Paper Company's plant at 12,000 volts. At the company's own sub-station there is a further breakdown to convenient mill voltages. In 1947 the peak load demands by the Thorold plant for Hydro power were approximately 27,500 kilowatts. Based on an estimate of increasing production requirements, it is expected that "peaks" of 37,000 kilowatts will be called for in 1952.

The annual consumption of pulpwood logs at Thorold is now about 150,000 cords, which means that an average of

Production Of Canadian Newsprint Mills Has Established All-time Record —Hydro Called Upon to Play Important Role As Ontario Plants Modernize Machinery and Processes To Meet New Demands

more than 500 cords passes through the electrically-driven barking drums every day. After being shorn of their bark the logs are processed into 85 percent ground-wood pulp and 15 percent sulphite pulp (the latter to give the newsprint strength and a clearer colour) and the two pulp-types are then combined into a pulp slurry for the paper machines.

Electrical Equipment

Six, 3,000-horsepower induction-type motors; one 1,200-horsepower synchronous-type motor; one 3,000-horsepower synchronous-type motor and four 2,400-horsepower synchronous-type motors provide the drive for the grinders. In addition, two 3,000-horsepower synchronous-type motors are being installed to give greater grinding capacity. Five of the six 3,000-horsepower motors have been in operation since newsprint production began at Thorold and the original windings are still intact. Altogether, there are some 900 electric motors in service ranging all the way down from these giants to midgets of 1/15 of a horsepower, providing the "delicate" power for laboratory and inspection tests.

Making Newsprint

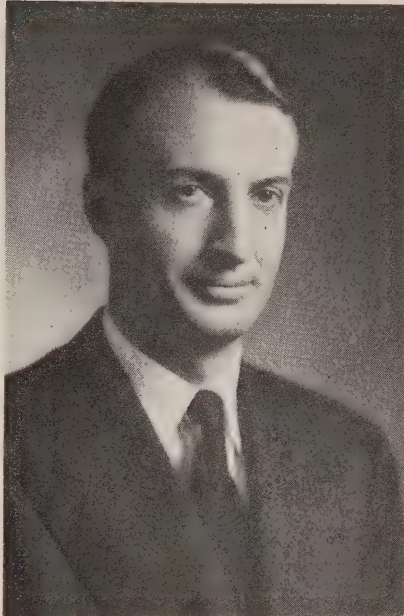
Passing on to the paper mill where the company has installed a cooling and ventilating system which is recognized as one of the most up-to-date in Canada, we followed the transition from pulp to paper on one of the machines.

After passing through the machine screens the pulp flows to a headbox from which it discharges through a narrow rectangular orifice called a "slice" which extends the full width of the machine. The discharge flows on to an endless wire screen travelling at approximately 1,200 feet per minute on which the sheet is formed. Much of the water is drained off by various devices before the sheet reaches the couch roll.

From the couch roll the sheet is conveyed by endless felts through two presses where more water is removed. From the last press the paper goes to the dryers, a series of large rotating steam heated drums. In the dryer section the moisture content of the paper is reduced to about 7.5 percent. The paper then passes through the calendar stack, which is a series of steel rolls mounted vertically one above the other. These rolls put a "finish" on the paper, the action being the same as that of ironing the weekly household wash.

The paper is wound on a reel which takes the sheet at the full width of the machine. The paper is then trimmed to required widths and carefully wound on cores. The trimming is done by disc slitters spaced at distances corresponding to the widths of rolls required by the news-

NAMED SECRETARY



E. B. Easson

Appointment of E. B. Easson as Secretary of the Commission effective May 1, was announced recently by R. L. Hearn, General Manager and Chief Engineer.

Mr. Easson was named Acting Secretary on January 1 this year, succeeding Osborne Mitchell who relinquished the position to become Secretary of the Brazilian Traction, Light and Power Company Limited. Mr. Easson has served the Commission in various capacities over a period of 17 years. From September, 1946, until his new appointment on January 1 of this year, he was Assistant to the General Manager.

A native of Ottawa, Mr. Easson graduated in Commerce and Finance from the University of Toronto in 1930. Following graduation he joined Hydro and has been associated with the Commission continuously since that time except for four years' service with the R.C.A.F. during World War II.

paper. The rolls are then wrapped and made ready for shipment.

New "Amplidyne" Drive

At the time of our visit to Thorold, standard direct current electrical equipment was being used to provide the drive for all five paper machines. We learned, however, that the company was preparing to install a new type of drive on its No. 5 unit. This was referred to by Mr. Eliason as "a sectional paper machine elec-

tric drive with electronic amplidyne speed regulation." It was gathered that this equipment is so designed as to ensure very close regulation of all component parts, with a consequent accelerating effect on production.

With total assets approximately \$60,000,000, the Ontario Paper Company is one of the leaders in its field. Its importance to the Canadian economy was well illustrated during the critical war years when through its exports it provided much needed American exchange for the purchase of armament and munitions, and its position with respect to American dollars has been improved since the war by a steadily increased production.

The Mills At Lakehead

While the Ontario Paper Company ranges far afield for its pulpwood supplies and is served by many subsidiaries, the newsprint plants in the Thunder Bay district are Johnnies-on-the-spot insofar as raw material is concerned and have developed a high concentration of local activities. To meet the increased demands for power by the pulp and paper companies in this district as well as to improve its services to industry generally, to rural consumers and to the Municipal Hydro and Public Utility commissions at Lakehead, The Hydro-Electric Power Commission of Ontario is now carrying out two highly important new developments. The first of these at Aguasabon near Schreiber is scheduled for completion this fall. It will augment the district's power supply by 40,000 kilowatts or approximately 53,000 horsepower. The other development, at Pine Portage, is on the Nipigon river about 15 miles upstream from the generating station at Cameron Falls. Two generating units are expected to be in service by December, 1950, adding another 60,000 kilowatts (80,000 horsepower) to the power pool, while provision is being made for an ultimate capacity of 120,000 kilowatts or close to 160,000 horsepower.

At the present time all Hydro power for the Lakehead district originates at the Cameron Falls generating station, which controls a sister development about 1½ miles downstream at Alexander Landing. Total capacity of these stations is in the neighbourhood of 110,000 kilowatts—approximately 147,450 horsepower. By 1950 this capacity will be nearly doubled.

The Port Arthur Mill

The Thunder Bay Paper Company at Port Arthur has been operating since July, 1927. It is now producing about 300 tons of newsprint a day, all of which is exported.

On our visit to the mill we were greeted by Sam Ashton, Personnel Supervisor and Frank Brown, Plant Manager, who showed us through the mill. T.

Out of the Woods

(Continued from page 5)

Clifford Anderson, General Superintendent, supplied information on plant operating data and modernization.

Hydro supplies 90 percent of the power used at this mill. The remainder is generated by steam plant installed on the premises. Peak Hydro loads at the time of our visit last February were averaging 15,250 kilowatts, an increase, we were told, of about 1,500 kilowatts over 1946 demands. It was expected that further modernization in the machinery of production then being carried out would call for an additional 450 kilowatts during the current year. Anticipating production requirements, it was believed that loads approximating 20,000 kilowatts would be required by 1952.

Newly-installed transformers at the Thunder Bay Paper Company reduce the transmission voltage to 4,000 for the grinder motors and paper machines and to 550 volts for auxiliary mill motors. Altogether there are approximately 475 motors in the plant, ranging from 1/12 horsepower to 5,000 horsepower.

This plant uses about 100,000 cords of pulpwood a year. The logs are cut to four-foot lengths for the barking drums. These are driven by 150-horsepower motors. After the logs have been stripped in the drums they pass to the sorting tables where they are divided into two lots. One lot goes to the chippers and the other to the grinding mill. The chipped wood is used in the making of sulphite pulp, while the ground wood is converted into mechanical pulp which constitutes about 85 percent of newsprint content.

Installing New Grinders

We found that the company were installing five new magazine grinders to be driven by five new motors, each with a 5,000 horsepower rating. This we were led to understand would be the latest and most efficient equipment of its kind, and would greatly accelerate production.

Each grinder magazine has a capacity for about 1½ cords of wood. The logs are fed from the magazine to a revolving synthetic stone—the new ones are 67 inches in diameter with a 54 inch face. As the logs come into contact with this stone, they are ground under a relentless pressure of 150 pounds to the square inch. Production of groundwood is about 33 tons per stone over a period of 24 hours. To make steam for the digesters where the pulp is prepared the company has installed an electric boiler with a capacity of 5,000 kva.

Perfect Teamplay

As we entered the paper mill sirens

Scale Model of Hydro Plant on Display



MORE THAN ten thousand visitors inspected the premises of The Canada Wire and Cable Company at Leaside Ontario, during that company's recent "Open House." One of the displays, shown above, was a scale model of Hydro's Queenston-Chippawa Plant round which a group of interested spectators is gathered.

were shrieking and men were rushing about "at the double" to take up positions along one of the two great paper machines whose farther limits were lost in clouds of steam and vapour. Our genial guides smiled as they read the anxiety in our faces.

"It's not a fire," Frank Brown reassured us. "It's just one of those little annoyances that occur from time to time in all paper plants. The sheet has broken going over one of the rolls. 'Now,' he said, with a touch of pride, 'just watch how those lads of ours fix things up.'"

Dexterity That Defies Description

The power had been turned off and men were swarming in on the roll where the break had occurred, while others had taken up their posts at the take-off end of the machine near where we stood. When the loose paper had been cleared, with a deftness and dexterity that defies description, the power was turned on again, controlled to a nicety while the new threading-up was carried out. In an incredibly short space of time the machine was once more in full-throated roar as the powerful Hydro drive carried the newsprint on its way at 1,000 feet a minute.

The plant manager had referred to the men as "our lads," not as "those fellows." To us it seemed to epitomize the fine spirit of co-operation and teamwork that we had found everywhere so evident in the pulp and paper industry.

The Mill At Fort William

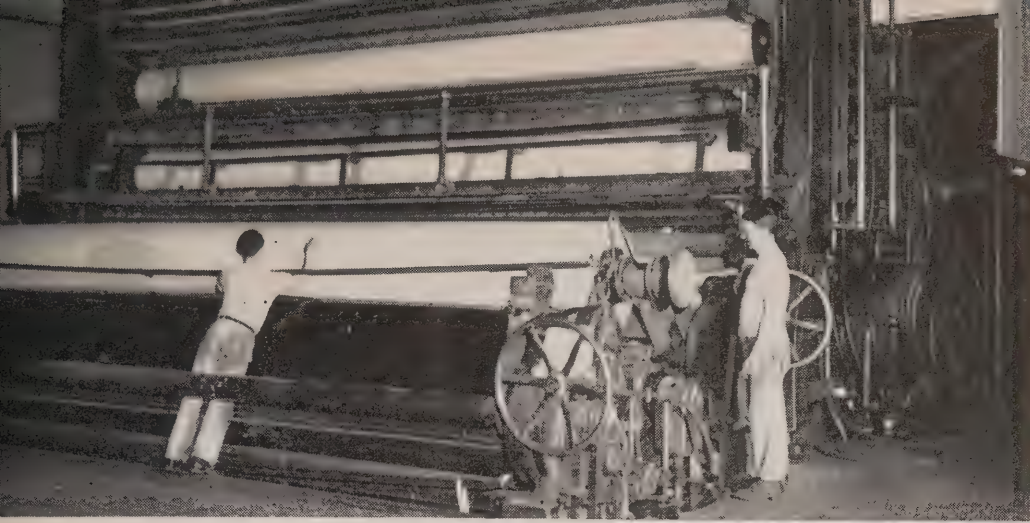
It was a cold day in February when we drove out to the Great Lakes Paper Company Limited at Fort William. But there was brilliant sunshine and the air was as stimulating as champagne served in a bucket of ice. Beyond the mill lay the massive bulk of Mount McKay. The ski courses on its slopes were sparkling invitingly in the sun, and our photographer, Burt Helling, who is something of an enthusiast over the most exciting of winter sports, gazed wistfully in their direction as we got out of the car. "Not today," he sighed, and then forgot all about it in the interest the paper mill had begun to awaken.

Constant Supply Needed

Inside the company's yards men were busy unloading pulpwood logs from a string of flat cars. The logs were being carried on the electrically-driven travelling belts of towering crane-shaped conveyors to the tops of the stock piles. The mill uses about 750 cords of pulpwood a day and the piles have to be continually replenished even in the wintertime.

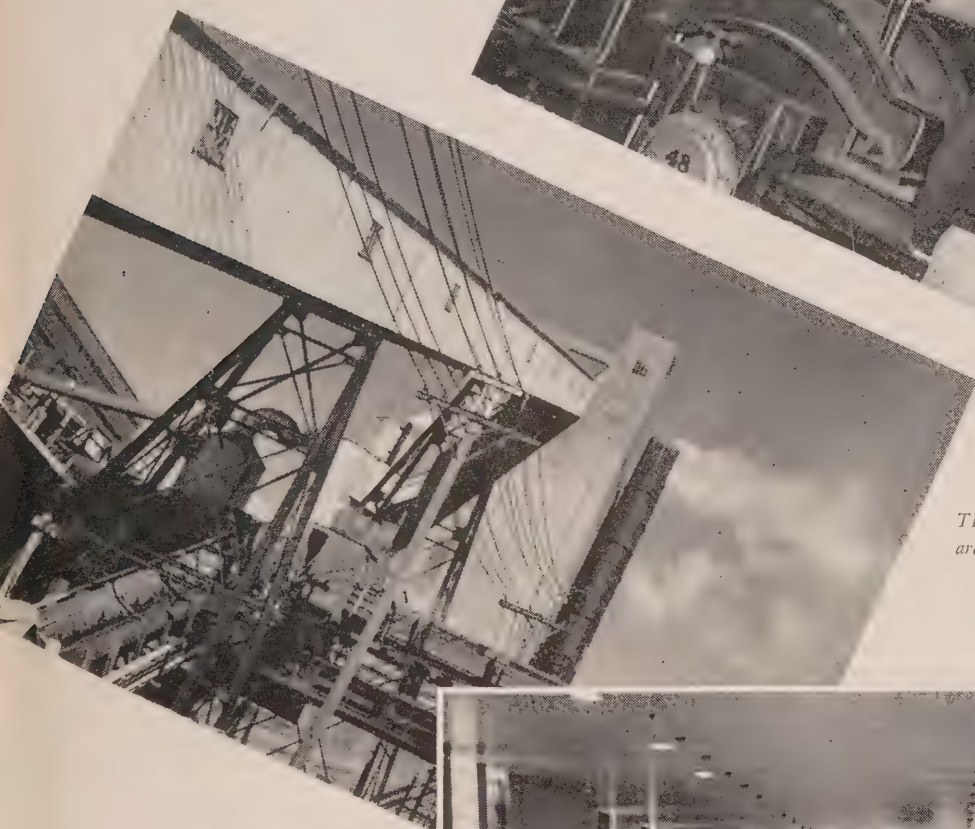
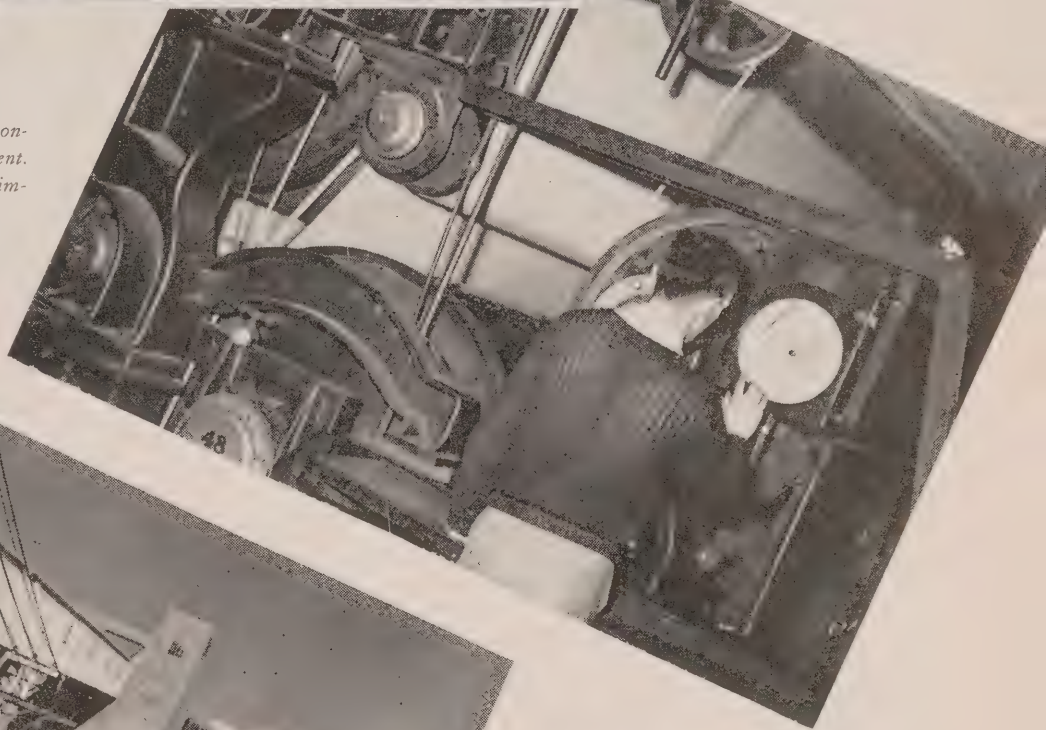
We passed on to the company's main transformer station. Here the power transmitted from Cameron Falls via Port Arthur is broken down to 2,300 volts for grinder and paper machine drives. Further reduction to 550 volts is effected for auxiliary motors. There are approximately 1,000 electric motors in the plant,

(Continued on page 8)



THIS GIANT 304-inch paper machine installed at the Great Lakes Paper Company's mill was once the biggest in the world. At the present time its only superior in size is said to be a machine installed in an English newsprint plant.

MODERN NEWSPRINT machines (right) are controlled as well as driven by electrical equipment. Regulation of paper speeds is of the greatest importance.



THE HUGE digesters (left) where sulphite pulp is made are fed by housed-in conveyors. "Vomit" stacks carry off obnoxious fumes.

WHERE PULP becomes paper. In the Thunder Bay Company's newsprint mill the "slurry" is passing off the wire mesh at the "wet end" of the machines to the drying cylinders.



OUT OF THE WOODS

(Continued from page 6)

and apart from the paper machine equipment, which uses direct current supplied by motor generator sets, they all operate on 60 cycle frequency.

Many Hands Employed

The mill has an annual output of about 125,000 tons of newsprint. In addition, 50,000 tons of sulphite, and 2,400 tons of sulphite screenings are turned out, mostly for the United States market. The company employs about 2,400 men in forest operations and approximately 1,000 men in its mill. Six city doctors are retained on call, and there are splendid first aid and medical inspection facilities on the premises, with a staff of registered nurses in attendance.

The company's plant at Fort William started off in 1923 as a pulp producing mill. No less than 18 wet pulp machines were installed. In 1928 there was a conversion to newsprint manufacture and now only three of these "old-timers" are left.

Pulpwood logs are shipped to the mill in 8' and 16' lengths and are sawn into 2' and 4' lengths for passing through the barking drums.

Improving Machinery

At the time of our visit the company was replacing its old grinding machinery with new equipment. This conversion, it was explained to us by C. Michels, the mill superintendent in charge of production, was aimed at securing better regulated electrical control. There were, he told us, nine lines of grinders—four grinders per line—in the old lot, each line driven by a 2,800 horsepower motor. These were being substituted at the rate of one unit a month by seven lines of grinders—two grinders per line—each powered by 5,500 horsepower motors.

The mill where the sulphite pulp is processed is an impressive structure when viewed from a distance and even more impressive on a closer encounter. The four great digesters, filled from the top with chipped wood from the conveyors, are flanked by acid tanks and tall rakish stacks which carry off the obnoxious sulphuric fumes.

Our photographer, who has a steplejack's passion for heights, had been anxious to "climb up where I can get a shot of what is going on." But as the wind was veering and with it the fumes from the "vomit" stacks, we decided against it and contented ourselves with a ground-plan view.

"Too Much Accumulation!"

There are two high pressure acid accumulators, with enormous kettle-drum

GEORGE CUMMER DIES



GEORGE CUMMER, formerly Superintendent of the Penetanguishene Water and Light Commission, died recently in a Toronto hospital after a lingering illness. He was 43 years old.

Mr. Cummer was born in Penetanguishene and received his education there. He became affiliated with Hydro 17 years ago and served all that time in the Penetanguishene region. He was active in local church and social activities and for two years held office in the Huronia Credit Union. He was married at Buffalo, New York, in 1928 to the former Emily Chambers and is survived by his widow, three daughters and three sons.

In recent years Mr. Cummer had been in poor health, and for the year prior to his death was intermittently confined to hospital.

bases. They are encased in steel with an inside lining of acid-resistant brick. The acid made in an adjoining section is piped into them and when the pressure drops in the digester they build up the acid supply required to restore it. It was rather odorous even on the outside of the accumulators and we noted with some misgiving that apart from the acid maker, A. Lemay, who seemed to rejoice in his surroundings, there was no one about to greet us.

After as short a sojourn as politeness permitted, we journeyed on, confirmed in the belief that Hydro power was the most fitting assistant for Mr. Lemay in the tasks which came under his supervision.

A Giant Paper Machine

Two very large paper machines are installed in this mill. The 304-inch ma-

chine was for many years the biggest unit of its kind in the world. Today it is said to be surpassed in size only by one other newsprint machine which was set up in an English plant just before the war. A short time before our arrival the Canadian giant, with the assistance of its 264-inch companion, in one 24-hour period had turned out just a fraction less than 435 tons of newsprint, establishing an all-time daily record for the mill.

New Construction Program

In spite of this achievement, we were informed by W. D. Beckett, Design Engineer, that a complete overhaul of both machines was to be carried out this spring and that the "wet ends" would be entirely rebuilt and many minor repairs effected. This work will be entirely carried out in the company's own fully-equipped machine shop.

During the war in this section of the plant, sirens were made from Admiralty bronze for corvettes, algerines and mine sweepers, as well as 3-inch valves and 3½-inch wedge-gate valves for barges. In addition, valves and parts were turned out for the Brockhouse trailers which were used to salvage tanks damaged by enemy action. Hydro power was, of course, extensively used in the machine processes involved.

The company has a big construction program lined up for the current year. A fifth digester with accompanying equipment will be installed for pulp making, and the wood room at the plant will be extended to add 50 percent to its present capacity.

Bigger Demand Predicted

Addressing the Fort William Chamber of Commerce during our visit to Lakehead, Hon. W. Earl Rowe, President of the Great Lakes Paper Company Limited, drew attention to the important place held by the pulp and paper industry in the Canadian economy. There were, he said, 113 pulp and paper plants in Canada of which 35 were newsprint producers. During 1947 their exports to the United States had brought in nearly 45 percent of the American dollars received in Canada. No other industry, he claimed, employed more people. No other industry distributed more wages. And in no other industry were there happier relations between management and employees.

Recently returned from war-scourged Europe, Mr. Rowe had nothing but praise for the valiant efforts of the Scandinavian pulp and paper industry to get back to pre-war levels of production. He believed, however, that it would take years to effect a complete recovery. With a current newsprint shortage in the United States, this meant increased demands upon Canadian mills, and an opportunity for them to advance to new horizons of accomplishment.

SORTING LOGS coming out of the barking drums at a big Lakehead newsprint mill. The bulk of the logs will be ground for mechanical pulp. The rest will be "chipped" for the sulphite mill.



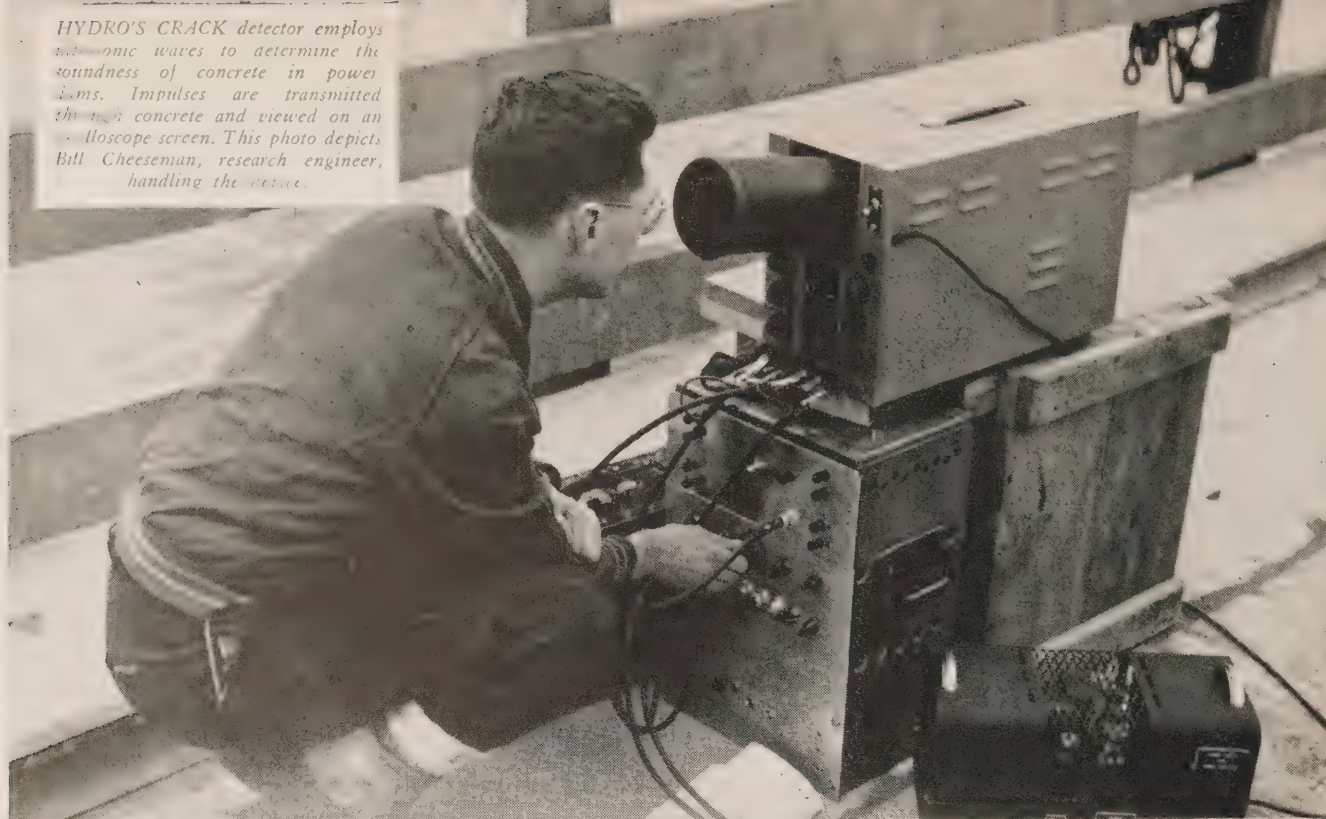
ELECTRIC SAWS at some of the larger plants will handle up to 750 cords of pulpwood a day.

BUILT AGAINST the bulk of Mount McKay are the mills of the Great Lakes Paper Company Limited, at Fort William.



THIS CONVEYOR in the plant of the Thunder Bay Paper Company at Port Arthur carries millions of chips on its shoulders, but the digesters in the sulphite mill are prepared to accept the perpetual challenge

HYDRO'S CRACK detector employs ultrasonic waves to determine the soundness of concrete in power dams. Impulses are transmitted through the concrete and viewed on an oscilloscope screen. This photo depicts Bill Cheeseman, research engineer, handling the device.



Hydro's Ultrasonic Eye

by
Boyd L. Graham
Hydro News

Can you look through a wall 60 feet thick? Well, Hydro engineers can perform this feat with the aid of their new "Ultrasonic Crack Detector."

One of the many technical achievements of research engineers at the Commission Laboratories, the detector, as its name implies, employs ultrasonic methods to detect cracks in concrete dams owned and operated by Hydro. Ultrasonics, or the equivalent word, super-sonics, are defined as sound vibrations at frequencies beyond the limit of the human ear—that is frequencies above 20,000 cycles per second. The detector apparatus operates on the principle that ultrasonic waves are, for the greater part, reflected backwards or dispersed on encountering a crack or a void in a solid body such as concrete.

Although it is fairly apparent to all that Hydro dams embody thousands of tons of concrete, only those vitally concerned realize the problems which beset the designer of these enormous structures. Chemical actions in new concrete are such as to raise its temperature to as much as 140°F. Two or three years may elapse before the interior of the con-

crete has cooled to normal temperatures, during which time it is continuously shrinking. The visible evidence of this shrinking is seen in the many surface cracks present in any concrete structure. How deep and extensive are these harmless looking surface cracks? Do unseen cracks exist far inside the dam? These were the problems presented to the Laboratory staff by those in charge of planning the Commission's hydraulic structures.

Hitherto, the only check on dam structures for concrete soundness had been regular tours of visual inspection of the external surfaces, and through the internal inspection tunnel of the dam. The first method developed at the laboratory, for determining the depth of surface cracks, was to inject a tracer dye by pressure and then drill in until the dye was no longer visible.

Experiments with ultrasonic detector apparatus were begun at the Commission Laboratories in September, 1945. The first tests were completed by May, 1946. Three research engineers, Jack R. Leslie, Keith H. Kidd and W. J. Cheesman have

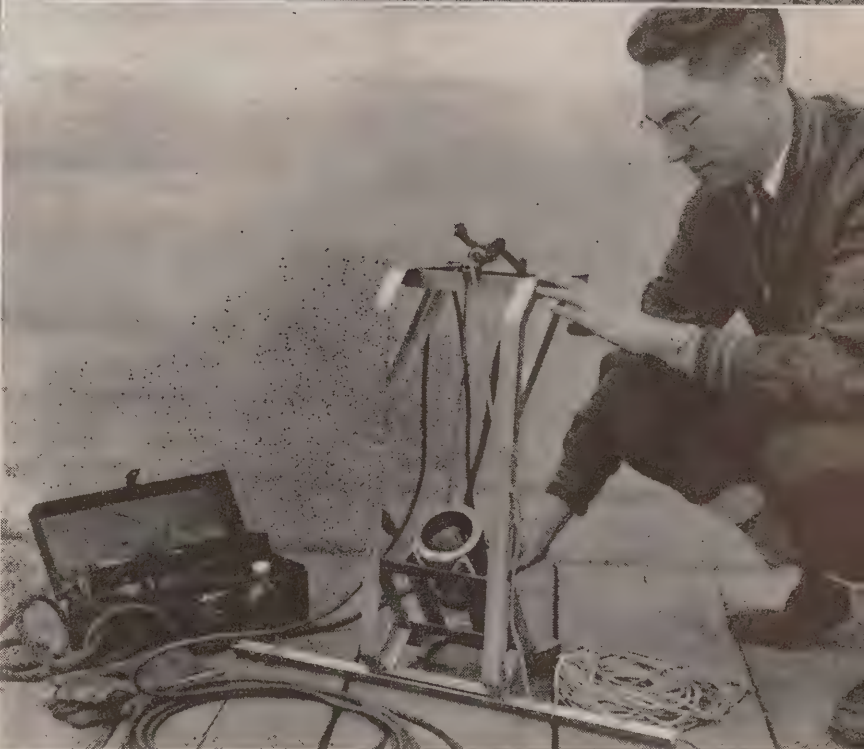
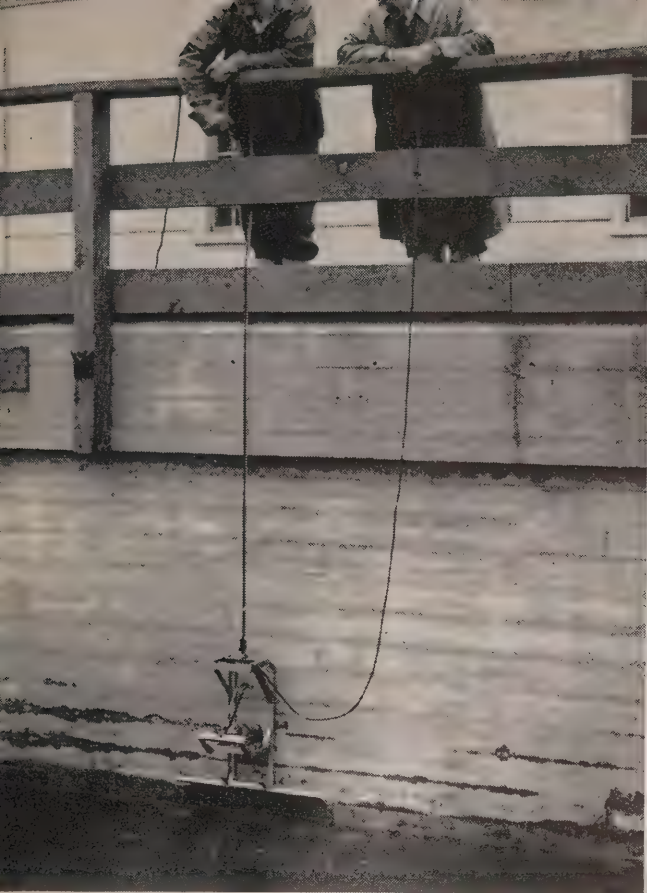
worked on the project and are still working to increase the scope of the device.

Hydro's "Crack Detector" today consists of a powerful ultrasonic vibration generator which transmits pulses of inaudible sound through the dam, together with an ultrasonic pickup which measures the amount of vibration transmitted through the concrete, electronic devices to generate and convert the vibrations into electrical impulses, and a cathode ray oscilloscope on which the vibrations are viewed. The presentation on the oscilloscope screen resembles that on a radar set. The impulses are visible on the glass screen as a narrow green line which fluctuates in height according to the strength and frequency of the vibrations.

The heart of both the ultrasonic generator and the pickup is tiny Rochelle-salt crystals about an inch long. These crystals have the unusual property of being set in mechanical vibration when an electrical voltage is applied to them. Alternately, they generate a minute voltage when vibrated, and in fact are used in most phonograph pickups today. The crystals are housed in an oil-filled brass case to exclude moisture. On one end of the casing is fitted a thin rubber "window" to allow passage of the vibrations to the concrete. The oil is forced in under pressure, expanding the rubber window

**Hydro Research Engineers
Design Crack Detector
Apparatus To Test
Concrete Soundness**

(Continued on page 30)



TESTING CONCRETE with Hydro's ultrasonic equipment involves careful "setting up" exercise. Upper left—John Cole and Jack Leslie lower the transmitter down the upstream face of the dam. Upper right shows the three research engineers, including Leslie, Cole and Bill Cheeseman unloading the apparatus.. Centre right—Bill Cheeseman demonstrates the method of fitting the transmitter on a crib before it is lowered into the water. John Cole, below, holds the receiver against the downstream side of the dam. The three engineers are shown in the lower left photo as they set up the oscilloscope apparatus which records the ultrasonic waves on a special viewing machine.



FLYING VISIT PAID BY HYDRO CHAIRMAN TO PORCUPINE CLUB

Attends Annual Banquet At
Timmins Accompanied By
A. W. Manby

Members and guests of the Porcupine Hydro Club were agreeably surprised at their annual banquet May 4, by the unexpected appearance of Robert H. Saunders, C.B.E., K.C., Chairman of The Hydro-Electric Power Commission of Ontario. The dinner was held in the G. V. Hotel at Timmins.

Accompanied by A. W. Manby, Assistant General Manager—Administration, and H. H. Leeming, Regional Manager, Northeastern Region, Mr. Saunders flew to Timmins from Toronto in order to be present at the gathering. Others from the Commission staff who briefly addressed the Club were A. C. Ferguson, Operations Engineer, Northeastern Region and W. Ollen-Bittle, Personnel Officer, Northeastern Region.

"Throughout the whole province Hydro has helped Ontario," said Mr. Saunders, "In my position I would like to know this province of ours much better. I would like to know its difficulties and how The Hydro-Electric Power Commission of Ontario can help. When I consider its importance Hydro throws out a chal-

lenge to me as it does to you to use it to the best of our ability."

Referring to the Commission's staff, the Chairman went on: "The more I see of Hydro's employees, the prouder I am to be associated with it. I believe in the future of Hydro, and I believe that if we co-operate with one another, we have nothing to worry about in the future."

A. W. Manby, Assistant General Manager—Administration, spoke to the gathering of his pride in the north country.

"In January last," he said, "when we were so short of power, I came north and put our cards on the table. The people of the north responded 100, no 120, percent. In fact you co-operated so well in saving power that we were able to lift the restrictions much sooner than we expected. This is typical of the spirit of the north."

Mr. Manby also spoke of the program being planned for the north and the tremendous task of reorganization now under way. He concluded by emphasizing that the water powers of the province belonged to the people of Ontario and were there for the benefit of everyone. "It is our intention to distribute this power equitably to the people of Ontario," the gathering was told.

SURPLUS REPORTED

Ottawa Hydro-Electric showed a total revenue of \$1,321,687 for the year 1947—an increase of \$27,749 over 1946—according to the annual report presented by S. W. Canniff, General Manager. During the year the number of consumers increased by 308, although the amount of power sold—125,494,230 kilowatt hours—represented a decrease of 268,220 kilowatt hours.

Future plans of Hydro in the north were discussed by H. H. Leeming, Regional Manager, Northeastern Region. He told his audience that the program would cost approximately three and a half million dollars and would require three years to complete.

The head table group included, in addition to the Commission Chairman, Reeve Anne Shipley of Kirkland Lake; Mayor Karl Eyre of Timmins and Mrs. Eyre, J. P. Burke, Area Manager, Mr. and Mrs. A. Connor, President of the Porcupine Hydro Club, Mr. and Mrs. C. C. Cunningham, Mr. and Mrs. C. H. Webb and R. H. Douglas, Supervisor of Promotion for the Northeastern Region, and Mrs. Douglas.

During the banquet Mr. Connor acted as Chairman. The guests were entertained by a male quartette consisting of Frank Boivin, Dr. Paul Clermont and Rene and Loinel Barrette. Jean Larcher provided the piano accompaniment.

LINDSAY HYDRO FOLK ENJOY THIRD ANNUAL BANQUET



W. ROSS STRIKE, K.C., Second Vice-Chairman of The Hydro Electric Power Commission of Ontario, was guest of honour with Mrs. Strike at the third annual banquet of the Lindsay Hydro-Electric System for members of the commission and the staff. Head table guests included, left to right, Mrs. Adsett, Commissioner A. T. and Mrs. Claxton, W. Ross Strike and Mrs. Strike, Commissioner J. G. Baldwin, chairman of the banquet, Mrs. Baldwin, Canon W. S. Battersby, Miss M. C. Edgar, H. K. Clifton, Mrs. Clifton, Mrs. C. V. Sleep and Commissioner C. V. Sleep. Others identified in this picture, include Mr. and Mrs. Earl Crimmons, Donald McFarquhar, Commissioner R. J. Morris and Mrs. Morris, Miss Orpha McFarquhar, Mr. and Mrs. Donald Lamb, Mr. and Mrs. Norman Maidens and J. H. Lightbody, Manager-Secretary of the Lindsay Hydro-Electric System.



PORCUPINE CLUB ANNUAL BANQUET

AMONG THOSE identified in this "long shot" are Mrs. Phil Therreault, Perry Lockhart, E. Wheeler, J. Tatton, Harry Dunfield, Sam Glassford, Mrs. Glassford and Mrs. M. J. Kennelly.

THIS HEAD table group includes J. P. Burke, Area Manager; Mrs. C. H. Webb, H. H. Leeming, Regional Manager, Northeastern Region, Robert H. Saunders, C.B.E., K.C., Chairman of the Commission, and Reeve Anne Shipley of Kirkland Lake.



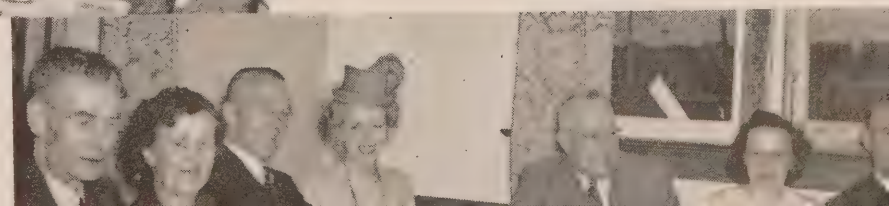
ANOTHER LONG range shot of the gathering shows Mrs. J. Sparling, C. Beauchamp, Nick Nastasuk, D. Bogardus, H. McNaughton, S. Culver and Mrs. Culver of Kirkland Lake, Joan Carson, Nelda Godin and Frances Cattarello.

SEATED TOGETHER here are Mayor Karl Eyre of Timmins, Mrs. Connor and Mr. Alf. Connor, President of the Porcupine Hydro Club; Mrs. Eyre and A. W. Manby, Assistant General Manager—Administration, H.E.P.C.



ANOTHER "BETWEEN courses" shot of the banquet hall. Within camera range are Mrs. E. Caron, Harry McNaughton, J. F. McDonald, W. D. Hardy, Mr. and Mrs. J. L. Penny, and Mrs. W. D. Sutherland.

AND HERE are A. C. Ferguson Operations Engineer, Northeastern Region; Mrs. Ferguson, Walter Ollen-Bittle, Personnel Manager, Northeastern Region; Mrs. R. H. Douglas, Mr. Douglas, Sales Supervisor, Northeastern Region; Mrs. C. C. Cunningham, Vice President of the Porcupine Hydro Club; and Mrs. J. L. Penny.



Stewartville Nearing Completion

CONSTRUCTION of the Stewartville development on the Madawaska River is about 85 percent complete.

It is expected that this 60,000 kilowatt (80,000 h.p.) generating station operating under a head of 148 feet, will be in service, on schedule, by September of this year. The concrete substructure of the power house is well underway and installation of the three Francis type turbines has already been started. Total cost of the development has been estimated at approximately \$10,500,000.

The concrete gravity type dam with a maximum height of some 206 feet and a length of 1,300 feet is situated on the Madawaska River eight miles southwest of Arnprior and approximately two and a half miles from Highway number 17, running from Arnprior to Renfrew. When completed the headworks will be incorporated near the northerly end of the dam from which three 14-foot diameter steel penstocks, about 190 feet long will convey the water to the three turbines in the power house which is located at the base of the dam.

The sluiceway section, consisting of two 35-foot steel sluice gates and two 14-foot stoplog sluices, is located on the south bank of the river. During the flood period, concrete training walls will direct the water to the exit end of the diversion

by
Grace J. Carter
News Editor

tunnel in which baffle piers have been constructed to reduce the force of the water before it re-enters the river downstream from the plant.

Diversion Tunnel

When the power site was dewatered, cofferdams were constructed at the upper and lower limits of the development and a diversion tunnel of the horseshoe type, 30 feet wide, 30 feet high and approximately 500 feet long was driven under the rock bluff on the south side of the river. The cofferdams and diversion tunnel were constructed to cope with spring floods. The tunnel will later be closed by steel gates at the entrance portal, and for final closure a concrete plug will be poured a short distance downstream from the portal. In order to obtain the maximum head of the development, the river channel below the power house is being deepened for a distance of some 2,200 feet.

When the plant is placed in service, probably next September, the flooded area

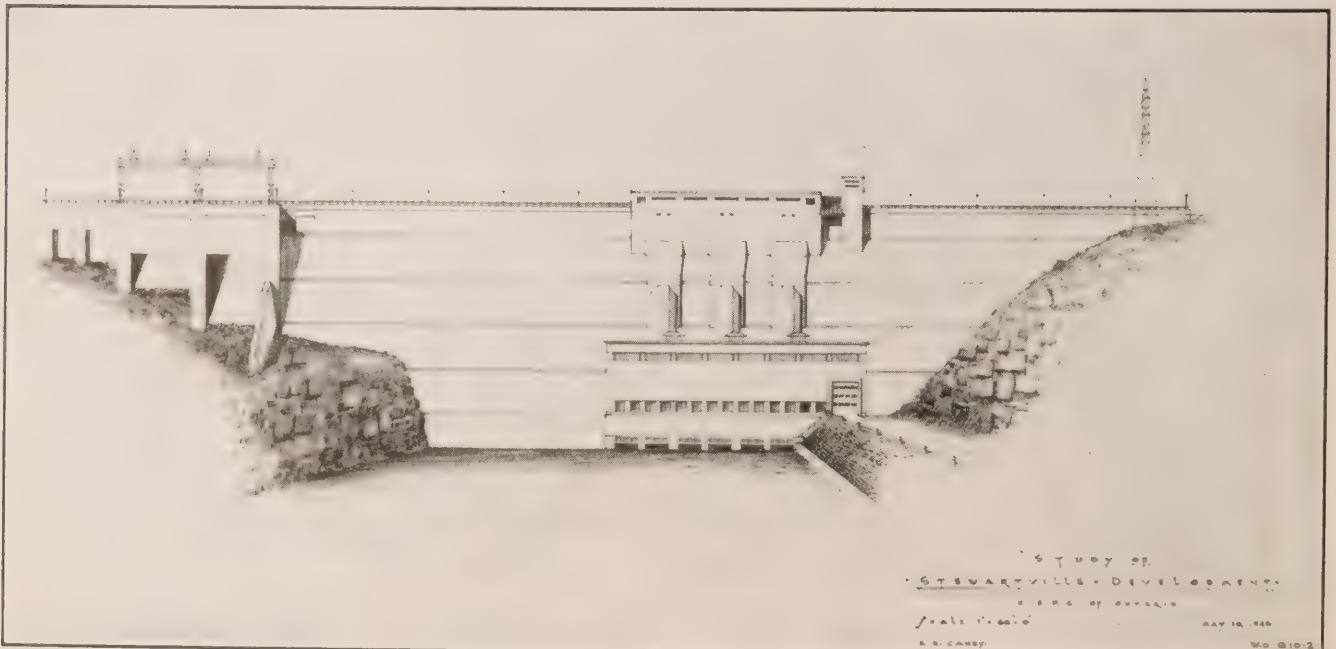
will cover some 1,100 acres and will extend upstream for a distance of approximately thirteen miles. Two bridges, one at Burnstown, and the other at Springtown, a few miles further up the river, are at present being reconstructed and raised to take care of the higher water levels which will prevail after the development is completed.

Concrete Mixing Plant

Construction of this project includes the excavation of approximately 700,000 cubic yards of earth and rock and the placing of approximately 280,000 cubic yards of concrete. During the peak period the continuous maximum pour on the dam was 12,000 cubic yards of concrete, 50 feet high. This pour occupied a period of four or five days.

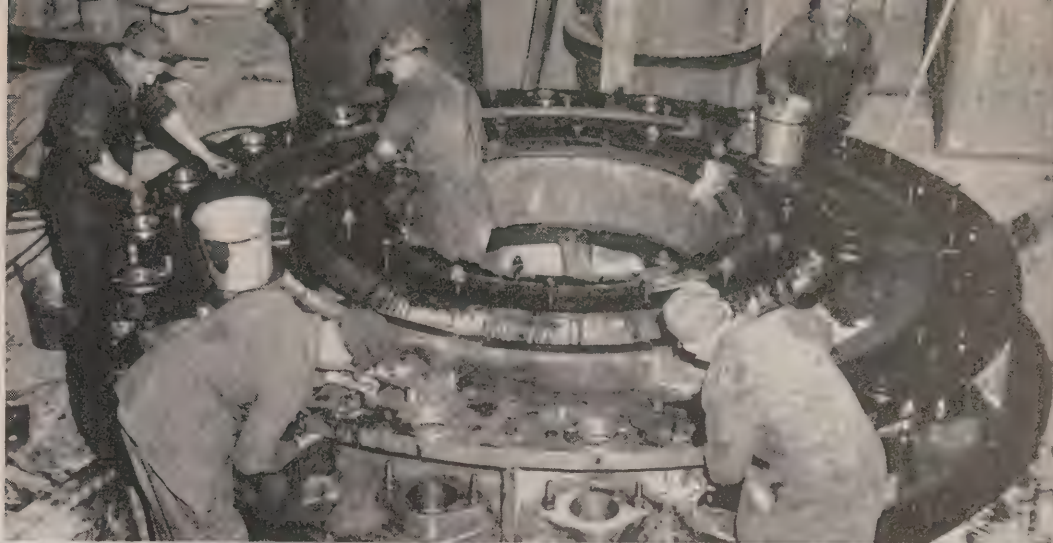
The main concrete mixing plant which consists of three two-yard mixers is located at the extreme north end of the dam. The concrete in the north end and river section of the dam is transported from this mixing plant by means of belt conveyors supported on a steel trestle. From there the concrete is conveyed to the various locations by inclined chutes and "elephant trunks." Concrete for the south end of the dam, the sluiceway section and the high water channel is being trucked from the main mixing plant to the south

(Continued on page 30)

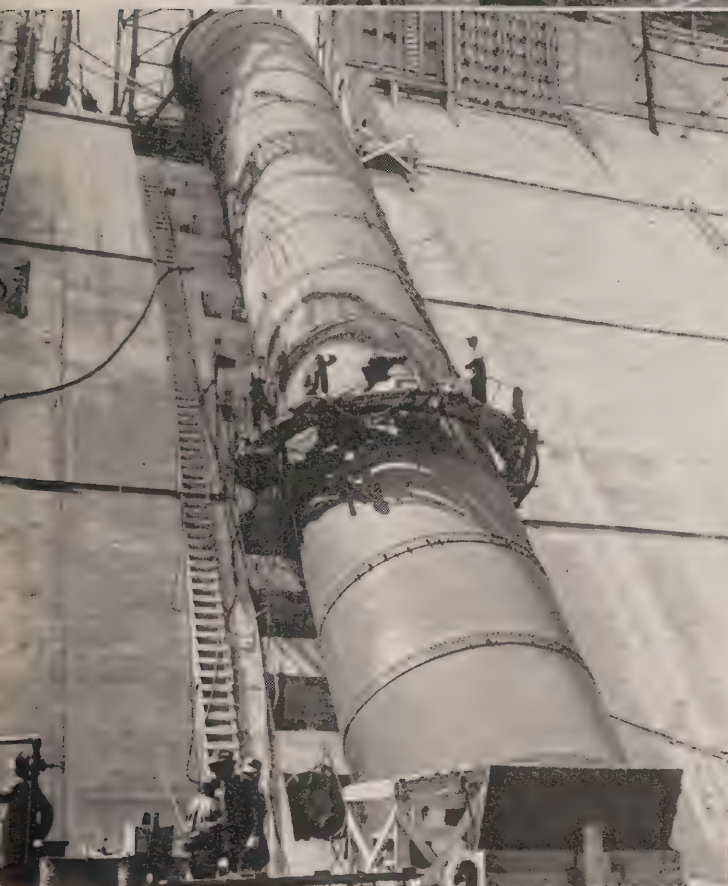


THIS IS an architect's conception of the Stewartville Development on the Madawaska River.

B E L O W:
 LOWERING the
 scaffold down the
 penstock so that
 they can start
 rivetting on the
 next section.



THESE MEN
 (left) were busily
 engaged in as-
 sembling the head
 cover which is
 part of the tur-
 bine.



RIGHT: TAKEN
 from the top of the concrete con-
 veyor, this repro-
 duction shows the
 three penstocks
 looking down-
 stream towards
 the frame work
 of the powerhouse
 superstructure.



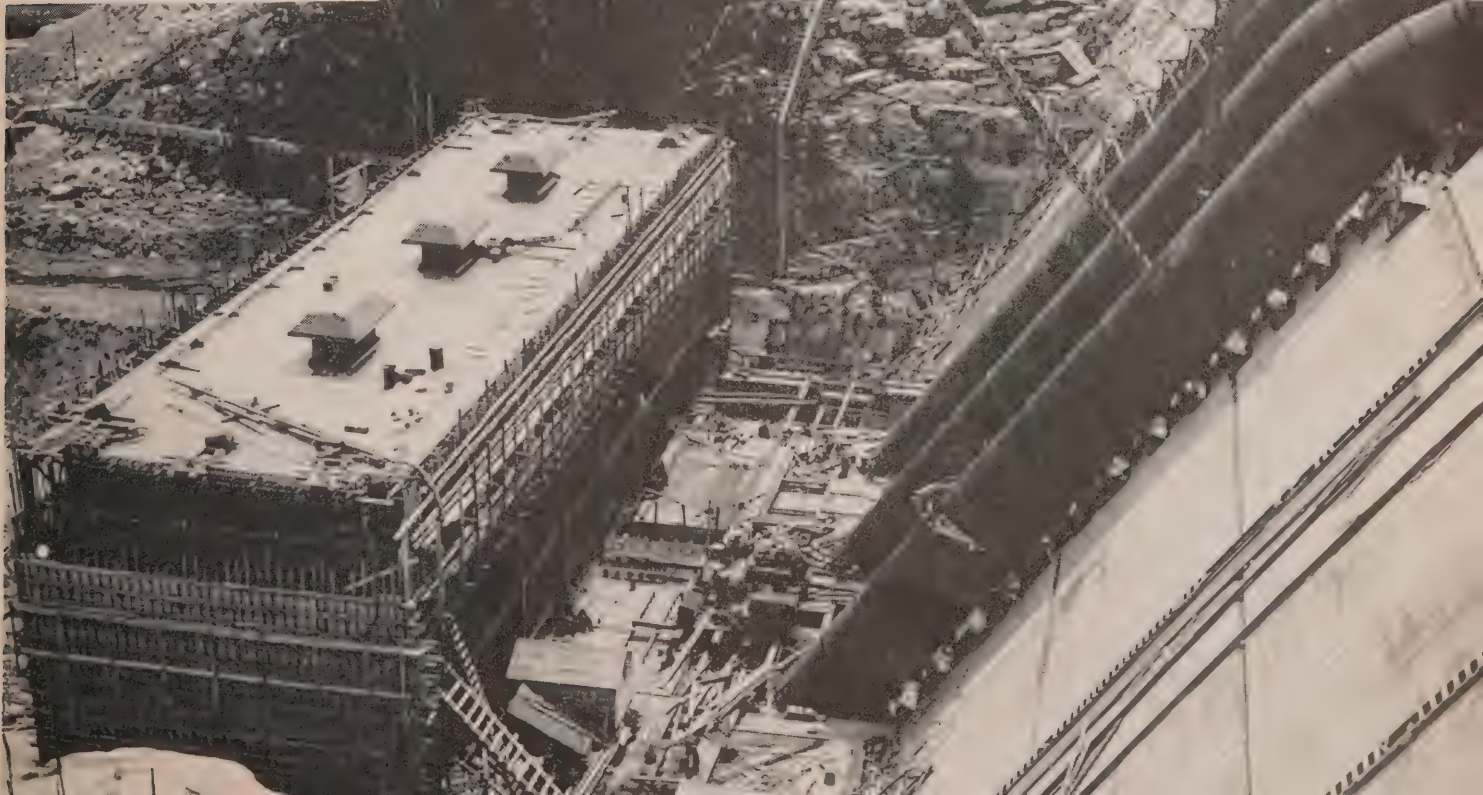
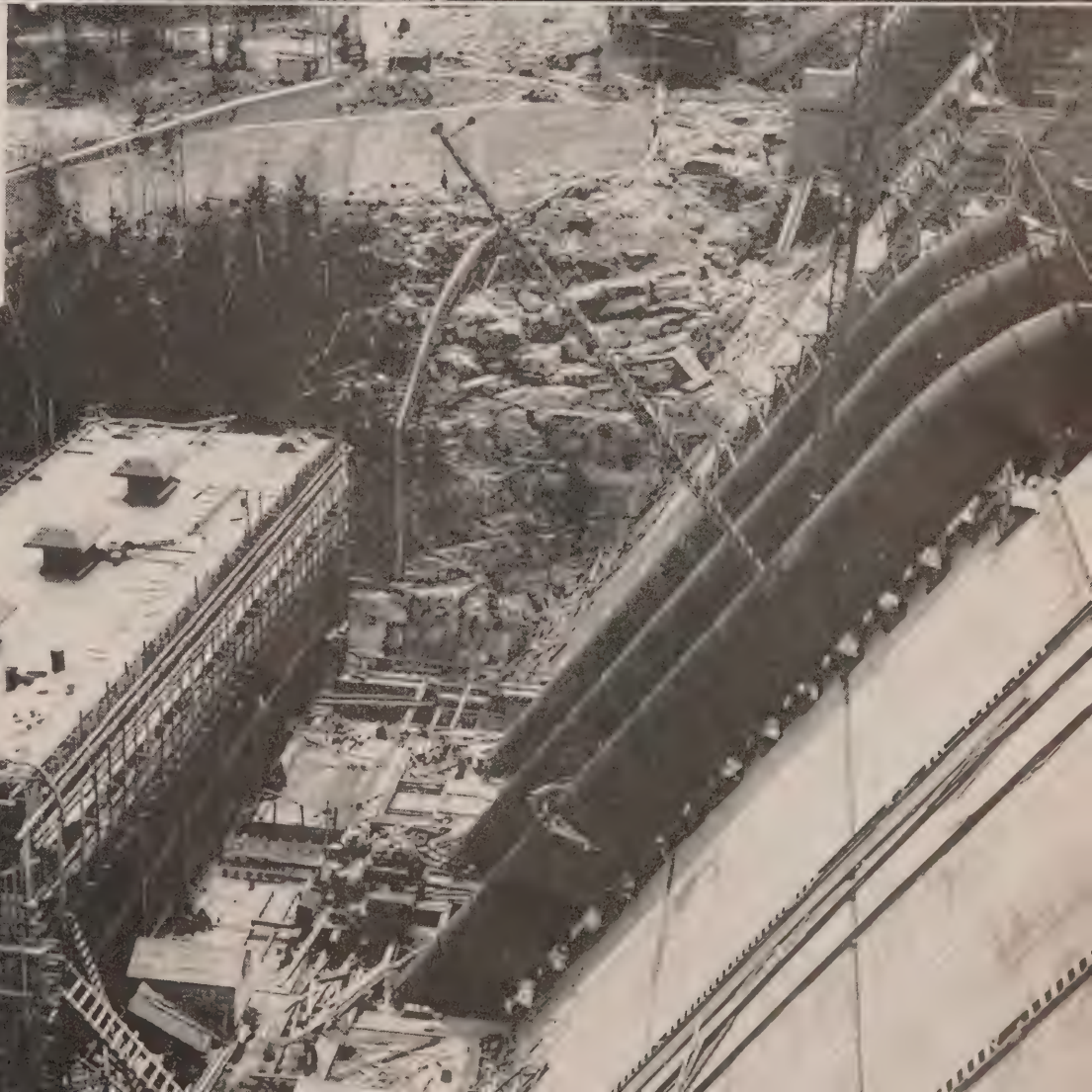
**THIS ILLU-
 STRATION**
 (above) shows
 the installation of
 the gate links and
 the main shaft
 coupling which
 connects the tur-
 bine to the gen-
 erator.



AN OVER-ALL picture of the Stewartville
southwest of Arnprior. It is expected that
station will be in service by September of
the dam and a section of what will be the
will be some 206 feet high and 1,300 feet long,
penstocks, which are about 190 feet long, a
house at



on the Madawaska River, eight miles
lowatt (80,000 horsepower) generating
the left is shown the upstream face of
en completed the concrete gravity dam
ight is shown the three 14-foot diameter
the water to the turbines in the power
dam.



TWIN

In The



—Fotosurvey, Toronto.

ENTIRELY LOCATED on Thunder Bay, the harbour of Port Arthur is protected by breakwaters, with 4½ miles of dredged slips. The business district of the city parallels the waterfront, and the residential section extends northward in picturesque terraces.

By Harry M. Blake, Hydro News

Behind the line of towering elevators which identify the Lakehead cities of Fort William and Port Arthur with the grain trade the stage is being set for a new drama of progress and development. For the opening act the directors will be Garfield Anderson, Mayor of Fort William and Charles W. Cox, Mayor of Port Arthur. They will be assisted by W. H. Spicer and Robert J. Prettie, Presidents respectively of the Fort William and Port Arthur Chambers of Commerce, while the News Chronicle of Port Arthur and the Times Journal of Fort William will record proceedings. Hydro will provide most of the power for both the "business" of the production and the lighting effects.

For the unfolding of the drama the stage itself will be vastly enlarged. The "back-drop" is envisaged at the entire

sweep of the north shore of Lake Superior for many miles in depth. This setting, it is felt, will give a sense of both unity and autonomy to the two cities and the many communities in the Thunder Bay Area and adjacent districts where the "action" will take place.

The curtain will not rise on a full stage. With each succeeding scene, however, more "properties" will be introduced and a larger cast will appear. There will be no "finalé," but, as the action proceeds, there are expected to be impressive *dénouements* from time to time.

Cities Are Co-Operating

During a winter visit to the Thunder Bay district Hydro News was privileged to attend the *première* of Act One. It has since struck us that if it were customary to use titles for the parts of a performance "Co-operation" would be a good one to assign to this initial act. We had heard about the old rivalry between the Lakehead cities, and, since the new pro-

duction calls for so much team-play and united effort, we had been a little worried about it getting off on the right foot. We need not have been.

The "preview" opened with Port Arthur's handsome new trolley coaches gliding happily through Fort William and with Fort William's equally attractive electric coaches speeding pleasantly down the main thoroughfare of Port Arthur. And before we went to bed we had heard a Fort William orchestra playing harmoniously at the famous annual "Rose Ball" of the Port Arthur Chapter of the I.O.D.E.

As Hydro will be essential to the success of the production, we called next day at the Port Arthur Public Utilities Commission and the Fort William Hydro-Electric Commission to find out just what was "cooking" in the way of "front stage" power and lighting. We discovered that preparations were already far advanced.

Local Hydro Programs

We were told by its Manager, R. B. Chandler, that the Port Arthur Hydro had been engaged since 1946 upon a substantial program with a view to meeting the electrical services required. Two new substations, each of 3,000 kva capacity, were now completed and the installation of a 5,000 kva bank of transformers at the local commission's High Street station was being carried out. This new equipment, it was explained, would replace a 2,250 kva transformer bank which would be removed to implement equipment at Current River where pulp and paper mills and ship-building yards are expected to figure prominently in industrial scenes. To further improve services the distribution voltages were being changed throughout the entire city.

Over in Fort William, the local Hydro-Electric Commission was busy improving the street lighting in the main business section of the city. We learned from A. W. H. Taber, the Manager and Secretary, that a new type of luminaire had also been approved for installation in the residential districts.

Power demands in Fort William, Mr. Taber pointed out, had been increasing steadily since the war. Not a month passed that failed to show an increase in power loads over the corresponding month of the previous year, and this increase was now running at the rate of about 750 kilowatts or 1,000 horsepower. To meet additional service requirements a new "out-door unit" type of sub-station

CITIES

Spotlight

was being built, with a capacity of 3,000 kva. This station, it was explained, would serve the rapidly-growing western section of the city which is expected to provide the *locale* for some spirited action as the new drama gathers speed and momentum.

Coaches Replace Streetcars

Streetcars will have no place in the modern spectacle which the Lakehead communities are staging. A few were still creeping furtively about in the more secluded sections of Port Arthur when Hydro News arrived for the preview, but it is expected that they will have entirely disappeared when the curtain rises for the first big tourist audience this summer. Twenty commodious inter-urban trolley coaches will be seen gliding to and fro between Fort William and Port Arthur, while each city will present an imposing array of smart gasoline busses operating within its own boundaries. Taking the two cities together, more than \$1,000,000 has already been spent on the change of transport equipment.

Introducing Dial Phones

The two cities are also making an important change in their municipal telephone systems. The new buildings now under construction—one in each city—will house equipment for the latest pattern dial telephoning. A Five-Digit system will be installed, making Fort William and Port Arthur practically one exchange. To begin with, 6,200 lines will be dial-equipped in Port Arthur, with an additional 800 already on order to provide for the unprecedented growth, and 8,000 lines in Fort William, where the municipal telephone system serves not only the city proper but also many outlying districts. Accommodation, it is understood, will be provided in the new Fort William exchange for the regional headquarters of the Bell Telephone Company which handles long-distance calls in the Thunder Bay area. The total all-inclusive cost of the change-over to dial in the Lakehead district is expected to run not far short of \$2,000,000.

Aqua "Super" Pura

Drinking water in Fort William and Port Arthur is reputed to have much of the zip and sparkle of a good champagne. The supply for the older city comes from a "mountain tarn" and is said to be so pure that filtration, let alone chlorination, is unnecessary. Port Arthur's supply



—Fotosurvey, Toronto.

FORT WILLIAM has an available dockage frontage of 22½ miles. The harbour proper lies mostly along the Kaministiquia river and its branches, which have been dredged for 13 miles and built up with wharves and retaining walls. The turning basin is 1,000 feet wide.

is derived from a clean, "untrodden" tract of Lake Superior, where the surface temperature infrequently rises above 50 degrees Fahrenheit even in the summer-time.

Port Arthur's residential district is steadily climbing back over a series of picturesque terraces. To improve and enlarge the water supply for this high-level section of the city a booster pumping station and a 2,000,000-gallon reservoir are being constructed. The cost, together with other rehabilitations of the city's waterworks system, is estimated at \$460,000. This programme, it is expected, will be completed this year.

Storing "Golden Harvest"

Now something about the "properties" and "business" which will be featured in the new development drama.

In order that they may enjoy to full advantage every prospect the spectacle will have to offer, the spectators and not the settings will be moved about. The

impressive elevators and industrial plants which are grouped along 30 miles of waterfront will remain as they are although it is confidently expected that their number will be greatly increased with the mounting "action" of the drama.

According to A. T. Calder, Chief Statistician of the Board of Grain Commissioners for Canada, there are now 24 licensed grain elevators at the Lakehead. These have a combined permanent storage capacity of 78,800,000 bushels. They are of reinforced concrete construction and fully equipped with modern machinery for the efficient handling of bulk grain in volume. Four of the houses represented have installed automatic car dumpers capable of unloading a car of grain in from 5 to 7 minutes. One of the Saskatchewan Pool terminal elevators was destroyed by fire in 1945, and the Pool is now building an addition to its No. 7 elevator in Port Arthur. This new construction, to be completed this summer, will bring the capacity of "No. 7" up to 9,000,000 bushels, while adding 2,100,000



LOOKING ACROSS the Nipigon river at Pine Portage where Hydro is engaged on a new power project which will have an important bearing on future developments in the Thunder Bay district. The location is about 15 miles above the Cameron Falls generating station, which, together with the Alexander station, situated in close proximity to it, has been supplying this north-western district of the province with power for a good many years.

bushels to the total storage capacity given for the Twin Cities.

The Lakehead, served by both the Canadian Pacific and Canadian National Railways, is the bulk breaking point for grain moving east, and most of the grain from the prairies passes through this gateway. The flow of the "golden harvest" of western Canada will provide the "motif" for much of the action "down-stage" at the docks and in the railway yards, with their 365 miles of trackage.

A New Giant Industry

After visiting the Kaministiquia River, which, through recent dredging, now provides Fort William with 13 miles of dockage facilities for lake vessels of the largest draught, we passed to the Port Arthur front where new docks were built a short time ago for the Steep Rock Iron Mines. This industry, located near Atikoken in the Fort Frances district, has been greatly assisted in its development by Hydro power generated at the Commission's Nipigon plants and transmitted over a line built out from Port Arthur. In 1947 it produced over 1,200,000 tons of iron ore and we gathered that the ultimate objective is set at 3,000,000 tons annually. Up to the present, this iron mine is said to have benefited the national economy to the extent of approximately \$7,000,000. The spur line over which the ore cars travel to the docks is supported for the last few hundred yards by a gigantic trestle. The stout timbers have not yet lost the freshness of the woods where they were cut, and, altogether, the struc-

ture seems an appropriate symbol of a healthy young giant among Ontario industries.

Ship-Building Yards

Passing passenger docks and more groups of elevators, one reaches the yards of the Port Arthur Shipbuilding Company, which is owned and operated by Canada Steamship Lines and extends over 65 acres. At these yards were built the "liner" Huronic and some of the biggest freighters to ply the Great Lakes. During the two world wars many smaller-type ocean-going vessels were turned out, and at the time of our visit six hopper barges for the French Government were on the construction ways.

There are other smaller shipbuilding plants at Port Arthur. According to L. J. Stiver, Manager of the Port Arthur Chamber of Commerce, the industry altogether represents an annual payroll of over \$1,400,000, and an annual production of nearly \$3,500,000.

Huge "Forest" Industry

Still "Front Stage" but supplied with the bulk of their power directly by The Hydro-Electric Power Commission of Ontario, are the plants of the Thunder Bay Paper Company and the Provincial Paper Limited, on the Port Arthur side, and the mills of the Great Lakes Paper Company Limited, just west of Fort William. There are also many other mills associated with the "forest" industry, and each one is of first importance. Mr. Stiver told Hydro News that five plants had been selected at random from

among those engaged at Lakehead in a type of manufacture for which wood is the raw material and that the total value of their annual production was found to be well up in the millions. Many other industries are represented by imposing buildings on the waterfront.

Housing Programs

Together, the Twin Cities have now a population exceeding 60,000. To provide more accommodation for the "Front Stage" actors in the drama of Progress and Development 302 new houses were constructed in Port Arthur in 1947. In Fort William a housing project involving the construction of 142 new houses has just been completed and D. Murie, Manager of the Fort William Chamber of Commerce, told Hydro News that another project for the building of an additional 100 houses is well under way. Implementing this construction under civic auspices, a good deal of private building is going on.

The substantial increase in actors and stage hands assembling for the new production necessitates the provision of more hospital accommodation. A new wing will be built to the Port Arthur General Hospital at a cost of approximately \$600,000. This will place 100 new beds at the disposal of patients. A new addition to the McKellar Hospital at Fort William is expected to cost over \$500,000. In the latter city, too, there will be an extension to the Sanatorium at a cost of \$225,000.

(Continued on page 22)



DANCING TO the music of a Fort William orchestra are these Port Arthur "Daughters of the Empire" and their partners. The younger set, in common with their elders, are now out for the kind of co-operation that will bring prosperity to the whole Thunder Bay district.

FORT WILLIAM trolley coaches travel right through to the eastern section of Port Arthur to pick up passengers and Port Arthur coaches make a similar excursion to the western borders of Fort William. Workmen are piling into a "Fort" coach. When the driver "starboards his helm," a "Port" coach will swing into view.



HUNDREDS OF freight cars line the miles of trackage in the vicinity of the Western Terminal elevators, one of many groups of grain storage houses which stud the river front at Fort William. The cars on the outer tracks have been unloaded and are ready to return to the West for further "golden cargoes."

ALTHOUGH THERE is no "pit" at Fort William for the buying and selling of wheat futures, the Grain Exchange Building plays an important part in what is still the principal business of this Lakehead city. It is a control and recording centre for shipping and elevator activities.



TWIN CITIES

(Continued from page 20)

Increasing School Facilities

Although there will naturally have to be some prompting from time to time, actors in the big Lakehead drama are expected to be well prepared for their parts. Most of the lines for Act One are being learned in plant, factory and office, but as the play progresses the younger generation will be brought into the scenes. To fit them for the roles they will play, both Fort William and Port Arthur are planning the construction of new schools and additions to present buildings to afford improved educational facilities. The permanent location of the new Government Technical Institute has not yet been decided upon but classes are already being held in a temporary building on Cumberland Street, Port Arthur. Total expenditures for the initial stages of this programme are expected to run to over \$500,000.

Farms To Play Bigger Role

While the Lakehead district is predominantly an industrial area, there are many promising farms scattered through the envining valleylands. The farmers are all anxious to take part in the great drama of progress and development, and they will not be content with supernumerary roles. At a recent conference with the Chamber of Commerce of the two cities, the Lakehead Exhibition Association and the Kiwanis Clubs, their representatives pointed out that last year the farms in the Thunder Bay area produced nearly 30,000,000 pounds of milk valued at \$1,250,000 besides enough eggs and poultry to supply most of the needs of the local urban markets. They drew attention to the fact that there were 132 fur ranches in the district—mostly mink farms—and that the annual production from these was valued at \$1,200,000. If more land were taken up, they expressed themselves as confident that farm production could be greatly increased all round. They also wanted better marketing facilities.

As a result, a survey of unoccupied areas suitable for farming will be undertaken and an endeavour made to get more people back on the land. It is also planned to substitute the present door-to-door peddling of produce with a system of centralized markets.

Hydro, of course, comes prominently into the rural picture. Up to January of this year the Commission's Thunder Bay Rural Operating Area had built 310 miles of line and was now serving 1,941 rural consumers. There are over 800 applicants on the waiting list. Of these, it is expected to add 141 to existing lines this year, so that they will have an opportunity of participating in at least the chorus of

ORDER GENERATORS FROM GREAT BRITAIN

Construction of a steam electric generating station, to be located on the Detroit River adjacent to the City of Windsor, will be undertaken by the Commission. Expropriation proceedings have already been instituted to secure land for this purpose.

It is proposed that this plant will have an initial capacity of 120,000 kilowatts (160,000 hp.) but the ultimate capacity of the plant will be 240,000 kilowatts (320,000 hp.). It is estimated that the initial development will cost \$21,000,000.

In this connection, the Commission has also announced that two of the largest steam turbo-generators to be installed in Canada have been ordered for the Windsor steam plant from the English Electric Company Limited, of London, England. They will cost approximately \$3,000,000.

Each of these units will have a rated capacity of 60,000 kilowatts (80,000 hp.) and, it is expected, the first will be placed in service on September 1, 1951, and the second, on November 1, 1951. Thus 120,000 kilowatts (160,000 hp.) will be added to the generating resources of the Commission to meet winter peak load requirements during the 1951-52 season.

Act One. The Commission also hopes to build this year 50 miles of new line, and the 133 additional consumers thus provided for together with 141 now receiving service make a total of 274 consumers to be connected this year.

In Fort William, as stated, the Municipal Telephone System serves nearby rural communities and although there is a backlog of 600 orders for new telephones, every effort will be made to extend services as rapidly as possible to new customers in outlying areas.

Hydro Power "Back Stage"

"Back Stage," under the huge "drop curtain," which extends all the way from Dryden to Heron Bay, are more pulp

and paper mills and many gold mines in various stages of development. Some of these industries have already taken part in previous productions. Others are new arrivals. Whether old or new, for the successful enactment of the more exacting roles for which they are now cast they will need a lot of assistance from Hydro power.

Important Developments

To meet "Back Stage" electrical requirements as well as to place itself in a position to provide more power for the "Front Stage" municipalities and industries, The Hydro-Electric Power Commission of Ontario is now carrying out important developments in the Thunder Bay district at an estimated cost of \$27,511,000. Its 40,000 kilowatt (53,000 horsepower) development at Aguasabon near Schreiber is now well advanced and is expected to be in service by September of this year. A start has been made on the Hydro undertaking at Pine Portage on the Nipigon river, which will have an ultimate capacity of 120,000 kilowatts (160,000 hp), and two of the four units for which provision will be made at this station should be in service by December, 1950. It is pointed out that this would bring the total dependable generating capacity of Hydro's Thunder Bay System at that date up to 208,000 kilowatts (278,820 horsepower).

For the spectators—and 96,000 are said to have flocked to the Lakehead in 1947 for the last act of the "Old Show"—there will be ample transportation facilities and these will be increased as the performance proceeds. At the present time there are two transcontinental railways, a transcontinental air service and two steamship lines serving Lakehead. There is an excellent all-year-around highway from the Minnesota border, over which most American motorists travel to the Twin Cities. And the directors of the new drama are looking forward to completion of No. 17 Highway between Schreiber and the Montreal river which will complete the circle around Lake Superior and provide one of the finest scenic routes on the continent.

Community Centres Planned

Variety is the spice of life and it will not be lacking in the new spectacle. Community centres are being planned which will give local colour and character to the production. Many sports scenes will be staged and a cordial invitation will be extended to visitors to participate in them. The "Front Stage" part of this programme includes golf and boating in the summer and skiing in the winter. For the latter pastime the slopes of Mt. McKay, the giant "tor" overlooking Fort William, are said to afford facilities second to none in Ontario. And back of the Twin Cities lies a grand fishing and hunting country, which has attracted nimrods from every quarter of the globe.

JAMES ECHERSLEY DIES SUDDENLY

Head of the meter department of the Toronto Hydro-Electric System, James Echersley passed away recently in Wellesley Hospital, Toronto. Born and educated in England, Mr. Echersley came to Canada as a young man and had been associated with the Toronto Hydro for 34 years and was about to retire in a few months. He was a member of the American Institute of Electrical Engineers and the Electric Club of Toronto.



MANY BIG lake freighters and passenger vessels have been built at the yards of the Port Arthur Shipbuilding Company, and the company has frequently received commissions for the construction of smaller type ocean-going craft. Here, on the stocks, is a hopper barge under construction for the French Government.

THE WELCOME sign on the highway between Fort William and Port Arthur is significant of the important role Hydro is playing in the development of the Twin Cities. Last year the Public Utilities Commission of Port Arthur was serving 8,410 consumers with electricity. Total loads approximated 27,000 horsepower.



THIS BUILDING is the home of Port Arthur's Public Utilities Commission and the Chamber of Commerce. In the foreground is one of the handsome new trolley coaches. Port Arthur and Fort William have banished street cars and are co-operating in providing a speedy modern inter-urban service.

THE HOUSING problem has been just as serious at Lakehead as in Southern Ontario. More than 300 new homes were constructed in Port Arthur during 1947 and an extensive building programme has been launched this year. The houses shown are in one of the city's new residential districts.



N.Y. AUTHORITY AND HYDRO OFFICIALS DISCUSS ST. LAWRENCE POWER PROJECT

On or about June 15, it is expected that application will be made to the International Joint Commission for authorization to proceed with the construction of the proposed hydro-electric development at the Long Sault Rapids on the St. Lawrence River.

If authorized, it will be a joint undertaking on the part of the Power Authority of the State of New York and The Hydro-Electric Power Commission of Ontario.

Plans in connection with application for authorization were discussed during a two-day conference in Toronto between the New York group and Hydro officials on May 20 and 21.

The representatives of the Power Authority of the State of New York who visited Toronto are: General F. B. Wilby, Chairman; Fred J. Freestone, Vice-Chairman; George S. Reed, Gerald V. Cruise and Jacob Grumet, the Trustees, and the following four officials: Col. Ivan Sat-

tem, Engineer; Charles M. Goetz, Counsel (Washington representative); R. G. Sucher, Executive Secretary and Counsel and A.C.M. Azoy, Research Director. While in Canada, the visitors had an opportunity of inspecting Hydro developments now under construction on the Ottawa River, including the Des Joachims plant.

The two-day conference focused atten-

(Continued on page 26)



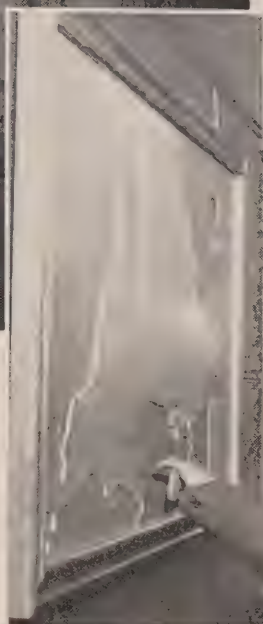
THIS REPRODUCTION gives an impression of how the proposed St. Lawrence Power Priority Project would look when completed. Conferences have just been concluded between representatives of the Power Authority of the State of New York and officials of The Hydro-Electric Power Commission of Ontario concerning the drafting of an application to the International Joint Commission for authorization to proceed with construction. This project, involving the development of 2,200,000 horsepower at the Long Sault Rapids on the St. Lawrence River would, if approved, be a joint undertaking with Ontario receiving 1,100,000 horsepower. The application seeking the necessary authorization, it is expected, will be made on or about June 15. The accompanying illustration shows, among other things, the main dam which would be constructed in the Long Sault Rapids, extending from the American mainland shore in a curving line to the head of Barnhart Island. The powerhouse would be located on the lower end of the Island, at the foot of the Long Sault Rapids astride the International Boundry.



ABOVE: R. L. Hearn, Hydro's General Manager and Chief Engineer, discusses St. Lawrence Power Priority Project with Col. Ivan Sattem, Engineer of the Power Authority of the State of New York.



ABOVE: Commission Chairman Robert H. Saunders, C.B.E., K.C., welcomes Gen. F. B. Wilby, Chairman of the Power Authority of the State of New York.



RIGHT: Dr. Otto Holden, Hydro's Assistant General Manager—Engineering, directs attention to features of the project.



THIS PHOTOGRAPH was taken as representatives of the Power Authority of the State of New York were received by Hydro officials at the Commission's Administration Building in Toronto. In the foreground are Chairman Robert H. Saunders, C.B.E., K.C., Gen. F. B. Wilby and Hon. George H. Challies, the Commission's First Vice-Chairman. Other N.Y. representatives in this group include Fred J. Freestone, Vice-Chairman; George S. Reed, Gerald B. Cruise, Jacob Grumet, Col. Ivan Sattem, Charles M. Goetz, R. G. Sucher and A. C. M. Azoy. Hydro officials include W. Ross Strike, K.C., Second Vice-Chairman; R. L. Hearn, General Manager and Chief Engineer; Dr. Otto Holden, Assistant General Manager—Engineering; A. W. Manby, Assistant Manager—Administration and E. B. Easson, Secretary.

ST. LAWRENCE

(Continued from page 24)

tion upon the power potentialities of the Long Sault Rapids in the St. Lawrence River. These rapids begin about ten miles west of Cornwall and continue to within three miles of that city. Between the Canadian and American mainland lie several large islands which greatly facilitate construction.

Chief Features

Under the proposed Power Priority Plan, the main features of the undertaking are essentially those which are representative of the power development envisaged in the Controlled Single Stage Project which formed the basis of the proposed 1941 agreement between Canada and the United States. It is emphasized, however, that the contemplated development is entirely a power project. All work primarily concerned with navigation will be omitted from the program, although the proposed construction will enable it to be carried out under favourable conditions at any future time.

Plans provide for a development with a total capacity of 2,200,000 horsepower. Among all hydro-electric developments on the American continent the undertaking is

said to be second in magnitude only to the Grand Coulee development on the Columbia river. Half of the total power output from the natural flow of the St. Lawrence river will be available to Ontario, and in addition Ontario will enjoy the benefit of water supplied to the Great Lakes system through the Commission's Ogoki and Long Lac diversions.

Main Dam

The main dam will be constructed in the Long Sault Rapids, extending from the American mainland shore in a curving line to the head of Barnhart Island. The closure between this structure and the high ground at both ends is to be secured by heavy earth dykes. The dam will have an overall length of 2,900 feet. The central portion, 2,390 feet in length, will be divided into forty 50-foot-wide openings by a series of piers, the flow through these openings being controlled by gates on the crest of the dam. This part of the dam will be flanked by bulkhead sections each with a length of 260 feet. The dam will have a maximum height of about 100 feet and there will be a roadway, approximately 20 feet wide, running across the top.

The powerhouse will be located at the lower end of Barnhart Island at the foot of the Long Sault Rapids and astride the International Boundary—one half in New York State and the other half in

Ontario. Although a continuous structure, each of the two sections will be complete in itself. The powerhouse will have a length of 3,600 feet and will be joined at either end to the high ground by concrete structures and earth dykes. It will house 36 main generator units.

Construction Features

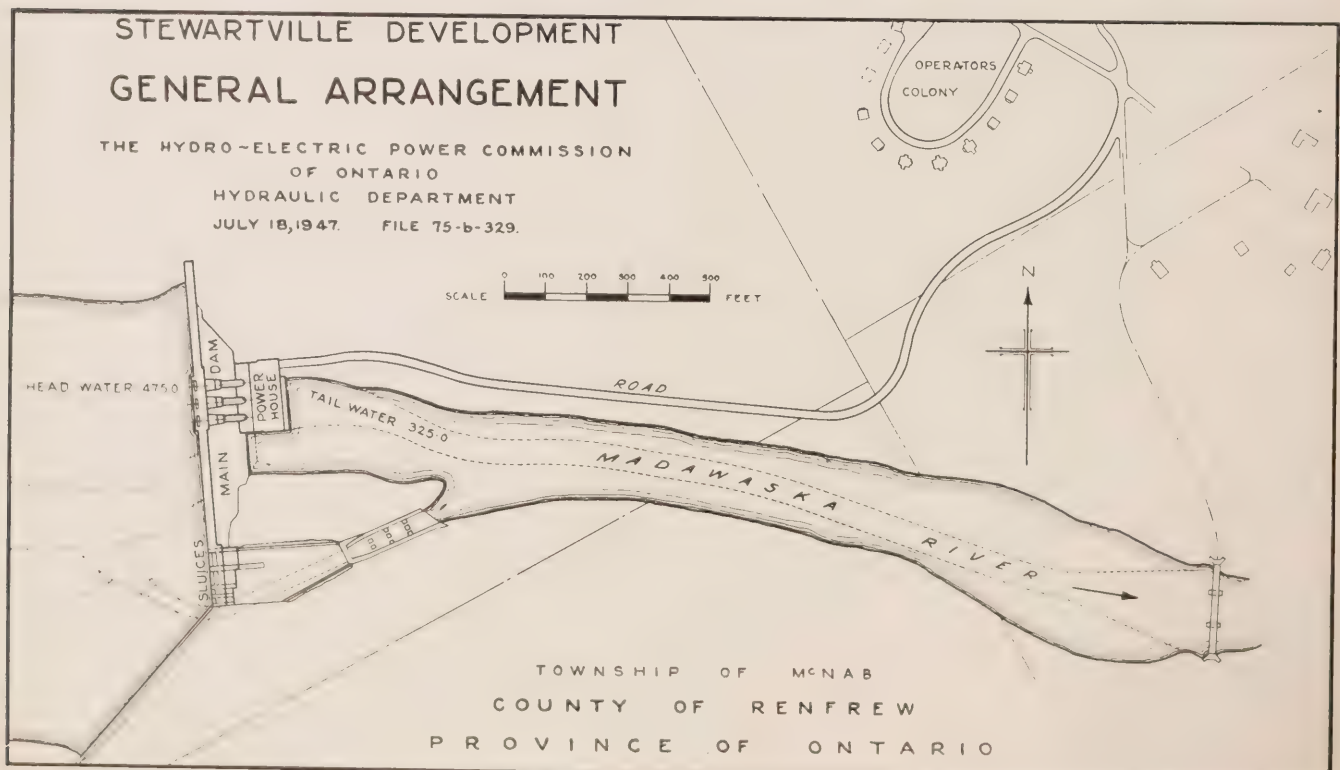
It is estimated that the construction of the powerhouse alone will require nearly 2,000,000 cubic yards of concrete and approximately 130,000,000 pounds of structural and reinforcing steel. Excavations for the powerhouse and related works are expected to entail the removal of approximately 4,000,000 cubic yards of earth and 225,000 cubic yards of rock.

Plans provide for the necessary railway and highway modifications on either side of the International Boundary and also for the necessary works to permit continuance of 14-foot navigation on the Canadian side of the river.

Enlargement of the river channels associated with the power development is expected to entail the excavation of about 11,250,000 cubic yards of material while approximately 1,550,000 cubic yards of concrete and about 6,700,000 yards of compacted earth will be used on other work connected with the project.

If authorized, the Long Sault power development project, under normal conditions, may be expected to take between five and six years to complete.

EXPECT STEWARTVILLE PLANT TO BE IN SERVICE BY SEPTEMBER





Orange blossoms were first worn many generations ago when a bride tucked them in her hair to show her gratitude for some money that the Queen of Spain had given her. The bride's father, who was the palace gardener, had planted some orange trees around the grounds. That story spread so far around the world that the idea has become traditional . . . for brides.

* * *

Now I don't really need to tell you about strawberries and cream for breakfast, lunch or dinner, but have you ever enjoyed the combination of cream and chopped prunes? Top with a few nuts and you can serve it to impress your in-laws.

* * *

Ice cream tarts is the answer to a special dessert. If you have a few extra tart shells on hand after baking day, fill with ice cream (after you've eaten the main course) and pour a little chocolate sauce on the top.

* * *

Who doesn't enjoy the crispness of melba toast as a salad or soup accompaniment? It is simple to make and is a practical way to use left-over bread. Merely cut bread in very thin slices and cut each in half. Then spread out on baking sheet and bake in an electric oven (300 degrees) for 15 minutes.

* * *

Another trick with bread is Waffle Toast. Simply remove the crusts from soft bread. If desired, spread with butter. Bake in hot waffle iron until toasted. This toast is delicious spread with cottage cheese and fresh crushed berries.

* * *

Fluffy, delicate whipped cream adds the gourmet's touch to any dessert. Whio it vigorously to get the most out of it. That is: select a deep narrow bowl for beating thoroughly. Chill cream, beater and bowl. Beat quickly until cream partially thickens. Then sprinkle 2 tablespoons fine sugar, 1 teaspoon vanilla into it and whip only a few seconds more,

JEWEL JAM

1 quart pitted cherries
1 quart gooseberries
1 quart red currants
1 quart raspberries
8 cups sugar

Wash and pit cherries and put in kettle with two cups of the sugar. Bring to the boil and boil for five minutes. Then add the quart of cleaned gooseberries and two more cups of sugar. Bring to the boil and boil five minutes. Then add the quart of cleaned red currants and quart of cleaned raspberries and four cups sugar. Bring to boil and boil five minutes. Pour into hot sterilized jars and when cooked, seal with paraffin. Yield: Approximately four pints or nine jam jars.

until cream will stand in peaks when beater is taken out.

* * *

Is the preparation of cream puffs a mystery to you? If you follow this step by step method you can make this treat in no time. (1) Combine $\frac{1}{4}$ cup butter, $\frac{1}{2}$ cup water, few grains flour in heavy saucepan. Bring to a vigorous rolling boil. Remove from heat. (2) Add $\frac{3}{4}$ cups of flour all at once and stir until well blended and it forms a ball. (3) Add two beaten eggs gradually, beating smooth after each spoonful is poured in. (Have patience because the mixture will eventually become smooth.) Drop by tablespoon on a buttered baking sheet. (4) Bake in a hot electric oven (450 degrees) for 10 minutes. Decrease heat to moderate (350 degrees) and bake 15 minutes longer. (No peeking during first 20 minutes of baking.) (5) Cool and cut off tops and fill with whipped cream. Recipe yields six or seven puffs.

* * *

Sometimes, just when you have the salad ready to put on the table, daughter brings in an extra friend for lunch. A few cornflakes added will increase the amount of salad.

We are grateful for our lunch hour which begins at 11.55 a.m.—mainly because the food tastes better. When you consider that green peas cook in 12 minutes, and they lose most of their flavour in five minutes over-cooking, then it's no wonder we are not interested in food after the regular hour. (However, we know of two nearby restaurants that cook continually during the rush hour.)

* * *

It is desirable to plump the raisins for a salad using cold water in which you soak them for five minutes.

* * *

Definition: Canister, from which the word "can" is derived, comes from the Greek word "Kanastron" meaning a basket of reeds in which tea, coffee, fruits and vegetables were carried. This week, in canning factories, the methods of modern production lines are operating at full capacity. In some plants between 250 and 400 cans are being filled per minute.

* * *

To copy the good-tasting roast pork which is served in the deluxe dining room, marinate in sauce. We know a chef who uses a little honey, some soy sauce, salt and chicken bouillon as the ingredients. Soak the meat in the mixture for an hour, then roast in a pan without liquid or cover. Pour the sauce over it an hour before end of roasting.

* * *

Tomato Rose Salad may look like the work of a professional caterer but it is so simple that you can do three or four in about 15 minutes. The ingredients: plain cream cheese, milk, tomatoes, watercress. Slightly soften cream cheese with a teaspoon of milk. On a peeled tomato, form a row of petals on the upper side by pressing a teaspoonful of cheese against the side of tomato, drawing the spoon down with a curving motion. Make a second lower row of petals placing each petal between two above it. Place tomato among watercress on the salad plate. Serve with spiced cold meat.



VITAMINS

Many people at this time of the year complain of feeling tired or run down or below par. They have been working hard during the winter and perhaps have had a few colds. They feel that they need something to pick them up. Some go to the corner drug store and the obliging druggist sells them this or that "tonic". Others go to their Doctor and if he finds no organic disease present he may prescribe something of the same sort. It is still hard to convince patients that health is not always to be found in a bottle of medicine.

Ten chances to one the tonic supplied by the druggist or prescribed by the doctor will contain vitamins or may consist only of vitamins. As in almost every new discovery there seems to be a period when use amounts to abuse, and this has certainly been true in the vitamin field.

What Are Vitamins

Vitamins are complex chemical substances which are found in small amounts in foods. There are about ten of them and these must be supplied to the body in small amounts if health is to be maintained. These amounts can be obtained in the foods available to the people of this country, but it is necessary that these foods be included in the daily diet.

Many of the vitamins have been isolated and their precise chemical make-up determined. Some have been synthesized—that is manufactured in the laboratory. It has been found possible to incorporate in a small pill or capsule amounts of vitamins much larger than would be contained in many pounds of natural foodstuffs. This has provided the physician a means by which large and known quantities of a vitamin may be administered to patients who require them. Many vitamins can be included in the one preparation. There is food evidence however that foods contain vitamins which have not been identified or isolated. The

CANADA'S FOOD RULES

The Nutrition division of the Department of National Health has set forth the constituents of a well balanced diet. It can do no harm to repeat them here.

1. MILK—Adults: $\frac{1}{2}$ to 1 pint.
Children: $1\frac{1}{2}$ pints to 1 quart.
2. FRUIT—One serving of citrus fruit or tomatoes or their juices; and one serving of other fruit.
3. VEGETABLES—At least one serving of potatoes; and at least two servings of other vegetables, preferably leafy, green, or yellow and frequently raw.
4. CEREALS AND BREAD—One serving of whole grain cereal and at least four slices of Canada Approved Vitamin B Bread (whole wheat, brown, or white) with butter.
5. MEAT AND FISH—One serving of meat, fish, poultry, or meat alternates, such as beans, peas, nuts, eggs or cheese. Use eggs and cheese at least three times a week each. Use liver frequently.

A fish liver oil, as a source of vitamin D, should be given to children and expectant mothers, and may be advisable for other adults. Iodized salt is recommended.

These are the foods for health.

Eat them every day.

Drink plenty of water.

only certain way to be sure that one is obtaining all the vitamins necessary to health is to take a balanced diet.

Vitamins and Health

If a diet is not balanced it may not provide adequate quantities of one or more vitamins. This results in illness, the type depending on the particular vitamin or vitamins which are lacking. Administration of the missing vitamins in the amounts necessary will cure the illness. There is no evidence to show that giving extra amounts of vitamin will improve health if there is no vitamin deficiency. There is no tonic value to vitamins if there is no deficiency present.

If a deficiency does exist it must be remembered it exists because there is a food deficiency. That food deficiency is important because food has other functions as well as that of providing vitamins. It provides protein, fat, carbohydrate and minerals so necessary as body builders and energy producers. It is not sufficient to replace the vitamin, the food deficiency must also be corrected if health is to be maintained.

Food deficiencies and vitamin deficiency do occur and do produce specific diseased conditions. Some people are so constituted that they can not handle certain foods and so may be deprived of necessary vitamins. The energy requirements may be supplied by other foods with these lacking vitamins added. In certain areas in Europe during the war the energy requirement was barely met, but the vitamin requirement was definitely lacking. The administration of concentrated vitamins in these cases was of the greatest value.

Are Vitamins Harmful?

In view of the widespread indiscriminate use of vitamins it is fortunate that there has been no evidence to date that harm results from the doses ordinarily taken. It is true that they can act as poisons if taken in excessively large amounts, and this has occurred particularly with one vitamin (D). The chief harm of indiscriminate self-medication with vitamins is in the false sense of security which it gives to the individual, thus delaying him from obtaining proper medical advice.

#his and #hat

by
The Editor

RECENTLY WE received a morsel of news we can really get our teeth into and digest for the benefit of our readers.

Going over his mail one morning, J. Walter Looney, Superintendent of the Thunder Bay System at Cameron Falls, read the following communique from the C.P. Agent at Renfrew: "Did any one of your party when at Renfrew leave artificial teeth in the station? If so, describe them for identification and send ten cents for mailing. Rush reply."

A quick survey made by Mr. Looney indicated that all the "home plates" should be accounted for and that the members of the Cameron Falls Colony were in a state of preparedness if they were confronted with large, juicy steaks.

Likewise the suggestion that any gentleman engaged at the Stewartville or Des Joachims projects might be lacking his false teeth brought the prompt reply that such an implication was "false." "All eating at Stewartville," one message read, while a wag at Des Joachims pencilled this note: "In emergency use on a 1½ yard bucket. Cannot release until Herman Hyland gets us a spare set!"

The next note read "Try Hydro News staff. Head Office Construction Department staff all masticating their food correctly."

As the Hydro News staff have been performing quite well in digesting both food and news, it was evident that someone was trying to cross "bridges" before coming to them in suggesting that any owners of false teeth on the staff had left them at Renfrew.

We certainly sympathize with the unfortunate individual who lost his teeth. Such a loss must have really "gummed up the works."

WE NOTED with interest a report from Budapest, making the claim that an invention, credited to Professor Zoltan Bay, Hungary's leading atom scientist, may revolutionize the electric lighting. It appears that the professor has devel-

oped a new source of artificial light, called the Carborundum lamp. Carborundum, it is pointed out, is a combination of silicon and carbon, produced by sending a powerful electric current through a mixture of coke and sand. If passed through transparent carborundum crystals, electric current is directly converted into a vivid white light. We wondered how effective this light might be when up against iron in the form of a curtain?

AT THIS time when people are starting holidays, the Health League of Canada is enlisting the aid of both vacationists and resort operators in the campaign to obtain compulsory milk pasteurization legislation throughout the Dominion.

The League suggests that holiday makers make sure that pasteurized milk is obtainable wherever they plan to spend their vacations, while resort operators are asked to make sure the milk they serve is pasteurized.

In Ontario the majority of people are so accustomed to receiving pasteurized milk, the League points out, that they sometimes forget that raw milk can exist and that raw milk can contain dangerous disease bacteria. We hope our readers will all have a pleasant vacation.

WE HAVE a number of friends who are golfers or who, like ourself, have attempted to hit a ball on one or two occasions. These friends, and readers who are golfers, may be interested in a few lines which reached our desk recently. We regret we do not know the author's name in order that due credit might be given. But here are the lines:

"I think that I shall never see
A hazard rougher than a tree—
A tree o'er which my ball must fly
If on the green it is to lie;
A tree which stands that green to guard,
And makes the shot extremely hard;
A tree whose leafy arms extend
To kill the mashie shot I send;
A tree that stands in silence there,
While angry golfers rave and swear.
Niblicks were made for fools like me,
Who cannot ever miss a tree."

For the time being, we think we shall

stick to tennis! Incidentally, if any reader is looking for a tennis club to join, let us know. This club requires two or three more members!

OUR THANKS to L. S. Treuge and W. E. Wallace of The Windsor Utilities Commission, Hydro Division, for passing along a piece published in the Detroit Edison's "Synchroscope."

It reads, in part: "It's wise to remind youngsters that kits fly best in the open, away from buildings and electric wires. Kite flying is fun—but good kite fliers, like good airplane pilots, follow rules. Our young kite flyers should be told that metal ribs in kites can cause short circuits when kites get tangled in power lines . . . that flying a kite in the rain is dangerous because wet string touching live wires can conduct electricity—and that climbing a pole to take down a tangled kite invites disaster.

Here are the rules to pass along to the youngsters:

1. Always fly your kite in the open, away from wires.
2. Don't fly your kite on a rainy day.
3. Always use cotton string, never wire or tinsel-covered cord.
4. Never climb poles to knock a kite off the wires.
5. Don't fly a kite that has metal or wire in frame or tail.
6. Never run across the street while flying a kite."

MANY STORIES have been told concerning Stephen Leacock but we remember one he told on himself. He had just received a Ph.D. degree before making a trip abroad. He signed himself "Dr. Leacock" on the liner's passenger list. The ship had hardly sailed before the steward knocked at the door of the stateroom and asked him if he were Dr. Leacock. The Doctor answered that he was. "Then", said the steward, "The captain's compliments, Doctor and would you please take a look at the second stewardess's leg?"

Dr. Leacock responded immediately. "But," he said, "I didn't have any luck. Another fellow reached the spot first. He was a Doctor of Divinity."

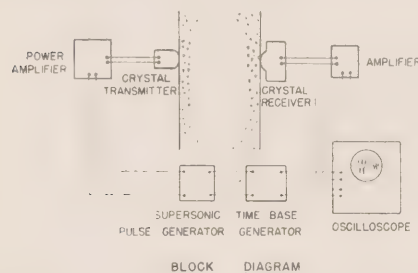
ULTRASONIC EYE

(Continued from page 10)

outwards so that it can make firm contact with the concrete. The receiver is similar to the transmitter in construction but is smaller in size.

Before making a test, the surface of the concrete is soaked with oil or water as very little energy is transmitted to the concrete without this precaution. Research engineers explain that air spaces at the surface of the concrete constitute a crack.

The transmitter is placed either in the inspection tunnel in the dam or under water against the upstream face. The receiver is held against the downstream face of the dam. The ultrasonic pulse travels through the concrete with a velocity of about 14,000 feet per second, and means are provided to measure the time intervals required for the passage of the pulse through the dam. From the measurement of the amplitude and the



BLOCK DIAGRAM, above, illustrates the basic principle of Hydro's ultrasonic equipment. A pulse generator sets up electric waves which are amplified and passed to the transmitter held against the face of a concrete dam and picked up on the downstream side by the receiver. This process is viewed on the oscilloscope, lower left.

velocity of the ultrasonic pulses as they pass through the concrete, it can be determined whether they are being deflected or dispersed by a crack.

A complete survey of the Commission's dam at Barrett Chute has been made with the ultrasonic apparatus, and tests have begun on the new dam at Stewartville. No large internal cracks were discovered in the Barrett Chute dam, but one significant surface crack was indicated. Extensive testing of this crack showed that it probably penetrates to a depth of 10 feet. All other surface cracks investigated were shown to be only a few inches in depth.

An important outgrowth of the development of this apparatus is the fact that the ultrasonic crack detector can also be used to measure the quality of the concrete. This is possible because the velocity of the ultrasonic pulse is proportional to the strength of the concrete through which it is transmitted. Thus

the Commission now has available for the first time a means of non-destructive testing of the condition of massive concrete structures. The measurement is found to be independent of the size or shape of the specimen. Hence comparison can be made between laboratory specimens a foot long and gravity dams 200 feet high.

Great interest in this apparatus has been shown in Canada and the United States. The Portland Cement Association of Chicago has been granted permission to copy the apparatus. They are soon to put it into initial use on a field structure at Tuscaloosa, Alabama. The development of the Concrete Crack Detector is regarded as another outstanding achievement of Hydro research.

RECREATIONAL CLUB AT FORT WILLIAM

Employees of the Fort William Hydro-Electric Commission recently formed a social club so that they would have an opportunity of getting better acquainted after working hours.

Their first "get together" took the form of a bowling tournament (won by the "Hot-Points") and cribbage. It is expected that future activities will include dinners, picnics and, during the winter, an entry in a commercial hockey league.

The board of officers elected for the ensuing year are: President, William Wright; Secretary-Treasurer, Miss V. Duffield; Members: Bert Steadwell, William Boorman, Miss F. Pattison and Miss M. Weaver.

STEWARTVILLE

(Continued from page 14)

side of the river where it is poured into the forms by means of pumpcrete machines.

At the present time there are about 850 men working at the Stewartville Development, of which 650 live at the camp. The camp itself comprises nine two wing bunkhouses with 36 men to a wing; an engineering staff house and a construction staff house, each accommodating 20 men. A First Aid station with two attendants takes care of any emergencies that may arise, and a large, completely equipped cafeteria provides good meals combined with fast service.

Facilities At Camp

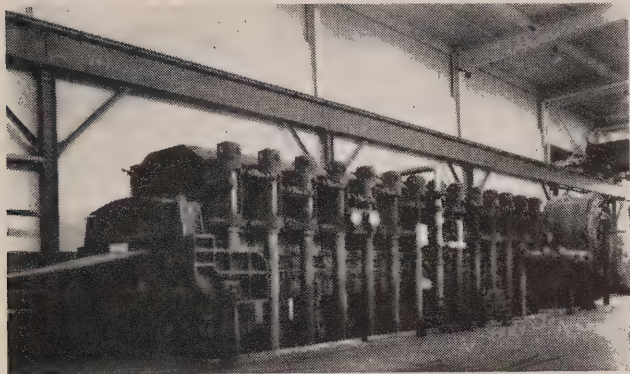
During the winter months residents at the camp made good use of the open air hockey rink and reading room, and now that the summer is here, the softball season is well underway. As the Stewartville project is only a short distance from Arnprior and Renfrew, many of the camp personnel visit the theatres and attend the sport events in these towns, particularly during the weekends.

Project Manager at Stewartville is W. B. Crombie, who has been engaged on projects of this character for over thirty years.



MEMBERS OF The Canadian Electrical Council took time out at the recent annual meeting while the above picture was taken. Those in the group, from left to right (seated), are J. S. Keenan, Canadian General Electric Company Limited; E. Glen Hohns, Renfrew Electric and Refrigerator Company Limited; J. K. Wilson, Shawinigan Water and Power Company; Arthur L. Brown, Northern Electric Company Limited, President; B. W. Fairchild, Canadian Electrical Association, Secretary-Treasurer of the Canadian Electrical Council and M. J. McHenry, Hydro-Electric Power Commission of Ontario, First Vice-President; and Stuart D. Brownlee, Secretary, Radio Manufacturers Association. Those standing from left to right are J. A. Blay, Hydro-Electric Power Commission of Ontario; Wilf Hodgins, Ontario Association of Radio and Appliance Dealers; B. N. Simpson, Canadian Electrical Manufacturers Association; George Austen, Electric Service League of Ontario; Dick Edmund, C.E.D.A.; L. L. Hartman, President of the Ontario Association of Radio and Appliances Dealers; and Fred R. Cavers, Canadian Association of Radio and Appliance Dealers, Second Vice-President.

HYDRO AT WORK



Hydraulic Belt Press

Having a total "squeezing" power of 4,310 tons this hydraulic press, when used with subsidiary equipment, is capable of making continuous belting of weights up to 15 tons—some squeeze!

Credited with being the largest hydraulic press in the Dominion of Canada, this unit is now in operation in an industrial rubber goods factory about 40 miles east of Toronto. It was specially designed to make possible the manufacture of extra wide conveyor belting in long lengths. The wind-up to draw the belting through the press is driven by a 10-horsepower motor.

The press is 63 inches wide and 31 feet long, and is equipped with a stretcher and clamps which keep the belting under stress while being vulcanized. In this way each ply of duck in the belting is kept in place, thereby eliminating the possibility of wrinkles developing during the processing.

Only part of the press is shown in the picture as nearly half of it with the heavy hydraulic piping have been installed under the flooring in order to ensure clean operating conditions around the press.

The movable section of the press is raised and lowered by water pressure at 250 pounds per square inch and 1,500 pounds per square inch. The pump which provides the pressure is operated by a 75-horsepower motor. The press is so rigid that it has a parallel tolerance of less than .004 inch over the full surface of the belt being cured.

Obviously a mammoth press of this character required considerable engineering skill and experience to construct, and Hydro News was informed that it is regarded as the present-day ultimate in this field of operation.

Expansion at Chatham

Indicating that it had kept abreast with industrial expansion in the city, with increases in all departments, The Chatham Hydro-Electric System ended 1947 with a net surplus of \$37,962, according to Manager R. S. Reynold's report.

The report submitted at the annual meeting showed that total revenue for the year from all sources, including gross revenue from all merchandising department, amounted to \$427,709.13, which is an increase over the previous year of \$47,277.12. Chatham purchased power to the value of \$225,426, while other costs including operation and maintenance amounted to \$161,320.47.

SOUTHERN ONTARIO SYSTEM EMBRACING NIAGARA, GEORGIAN BAY AND EASTERN ONTARIO DIVISIONS

PRIMARY LOAD



POWER DEMANDS AND TOTAL GENERATION

AREA SERVED BY	MAXIMUM 20-MINUTE PEAK KW		PER CENT INCREASE
	APRIL, 1948	APRIL, 1947	
PRIMARY DEMANDS — ACTUAL LOADS PLUS CUTS			
SOUTHERN ONTARIO SYSTEM . . .	1,793,507	1,779,767	+ 0.8
THUNDER BAY SYSTEM	114,926	106,000	+ 8.4
NORTHERN ONTARIO PROPERTIES	<u>186,959</u>	<u>180,548</u>	+ 3.6
TOTAL	2,095,392	2,066,315	+ 1.4
TOTAL GENERATION — INCLUDING POWER PURCHASED			
SOUTHERN ONTARIO SYSTEM . . .	1,704,967	1,689,727	+ 0.9
THUNDER BAY SYSTEM	115,826	111,500	+ 3.9
NORTHERN ONTARIO PROPERTIES	<u>244,059</u>	<u>232,888</u>	+ 4.8
TOTAL	2,064,852	2,034,115	+ 1.5

MUNICIPAL LOADS, MARCH, 1948

SOUTHERN ONTARIO SYSTEM			Domestic Consumption		Domestic Consumption			
NIAGARA DIVISION			H.P. Summers		H.P. Summers			
(25-cycle)								
	H.P.	Domestic Consumption						
Acton	2,383	620	Erieau	168	234	Palmerston	683	433
Agincourt	310	184	Erie Beach	21	94	Paris	2,602	1,240
Ailsa Craig	179	164	Essex	655	608	Parkhill	358	358
Alvinston	174	230	Etobicoke	15,598	8,484	Petrolia	1,114	860
Amherstburg	1,534	813	Exeter	1,091	611	Plattsville	277	126
Ancaster Twp.	515	431	Fergus	1,875	790	Point Edward	2,113	392
Arkona	121	133	Fonthill	323	340	Port Colborne	2,418	1,762
Aurora	1,972	861	Forest	709	552	Port Credit	1,368	711
Aylmer	1,705	830	Forest Hill	9,252	3,993	Port Dalhousie	1,137	758
Ayr	367	243	Galt	14,201	4,622	Port Dover	622	875
Baden	435	171	Georgetown	2,951	873	Port Rowan	156	420
Beachville	907	173	Glencoe	312	231	Port Stanley	454	948
Beamsville	745	453	Goderich	2,225	1,473	Preston	5,321	1,817
Belle River	284	368	Granton	95	90	Princeton	201	105
Blenheim	824	620	Grimsby	1,138	711	Queenston	169	85
Blyth	168	197	Guelph	15,281	6,156	Richmond Hill	803	485
Bolton	323	207	Hagersville	876	449	Ridgetown	766	648
Bothwell	190	204	Hamilton	172,380	45,670	Riverside	2,033	1,860
Brampton	4,226	1,784	Harriston	634	398	Rockwood	191	189
Brantford	28,540	9,089	Harrow	771	381	Rodney	209	290
Brantford Twp.	2,691	2,098	Hensall	338	233	St. Catharines	31,622	9,406
Bridgeport	282	212	Hespeler	3,728	892	St. Clair Beach	113	129
Brigden	178	135	Highgate	93	112	St. George	223	185
Brussels	293	273	Humberstone	743	811	St. Jacobs	410	142
Burford	395	260	Ingersoll	4,004	1,940	St. Marys	2,156	1,169
Burgessville	112	63	Jarvis	224	166	St. Thomas	9,755	4,920
Burlington	2,206	1,416	Kingsville	825	692	Sarnia	14,027	5,880
Burlington Beach	528	732	Kitchener	35,742	9,660	Scarborough Twp.	9,018	7,837
Caledonia	542	480	Lambeth	208	160	Seaforth	1,475	576
Campbellville	72	60	LaSalle	417	334	Smithville	538	196
Cayuga	277	200	Leamington	2,484	1,922	Simcoe	3,093	1,803
Chatham	9,210	945	Listowel	1,844	900	Springfield	113	121
Chippawa	447	413	London	46,837	21,930	Stamford Twp.	4,249	2,942
Clifford	142	141	London Twp.	736	547	Stoney Creek	459	289
Clinton	1,123	640	Long Branch	2,573	1,848	Stouffville	597	458
Comber	172	139	Lucan	300	207	Stratford	8,327	4,777
Cottam	125	149	Lynden	179	108	Strathroy	2,085	890
Courtright	79	107	Markham	509	380	Streetsville	762	227
Dashwood	155	112	Merlin	114	140	Sutton	387	502
Delaware	110	78	Merritton	10,429	1,037	Swansea	3,706	2,190
Delhi	913	704	Milton	2,056	623	Tavistock	776	316
Dorchester	159	158	Milverton	549	286	Tecumseh	581	794
Drayton	174	180	Mimico	3,567	2,478	Thamesford	329	160
Dresden	636	536	Mitchell	1,123	568	Thamesville	320	273
Drumbo	123	100	Moorefield	101	79	Thedford	180	185
Dublin	71	66	Mount Brydges	152	181	Thorndale	146	88
Dundas	2,822	1,600	Newbury	68	90	Thorold	3,833	1,471
Dunnville	1,866	1,142	New Hamburg	819	412	Tilbury	1,012	632
Dutton	307	244	Newmarket	2,564	1,215	Tillsonburg	2,110	1,343
East York Twp.	15,871	13,355	New Toronto	13,463	2,202	Toronto	439,325	156,033
Elmira	2,107	644	Niagara Falls	12,381	5,367	Toronto Twp.	5,994	3,914
Elora	683	374	Niagara-on-the-Lake	860	696	Wallaceburg	7,452	1,710
Embro	188	139	North York Twp.	18,040	9,611	Wardsville	83	75
			Norwich	649	419	Waterdown	378	291
			Oil Springs	206	117	Waterford	628	448
			Otterville	164	174	Waterloo	8,221	2,586
						Watford	504	324

MUNICIPAL LOADS, MARCH, 1948

	H.P.	Domes- tic Con- sumers
Welland	12,428	3,330
Wellesley	172	149
West Lorne	670	265
Weston	6,551	1,815
Wheatley	389	263
Windsor	58,338	27,603
Woodbridge	1,053	345
Woodstock	10,537	3,704
Wyoming	190	185

York Twp.	29,200	23,837
Zurich	165	168
(66 $\frac{2}{3}$ -Cycle)		

Bronte	236	244
Oakville	2,866	1,285
Trafalgar Twp.	937	661

GEORGIAN BAY DIVISION

(60-Cycle)

Alliston	643	478
Arthur	237	272
Bala	119	336
Barrie	6,115	2,787
Beaverton	280	365
Beeton	138	159
Bradford	597	322
Brechin	52	66
Cannington	326	279
Chatsworth	103	123
Chesley	761	490
Coldwater	197	164
Collingwood	3,154	1,759
Cookstown	120	138
Creemore	176	194

Dundalk	262	232
Durham	594	499

Elmvale	217	210
Elmwood	137	89

Flesherton	113	145
------------	-----	-----

Grand Valley	180	202
Gravenhurst	1,587	780
Hanover	1,943	944
Holstein	39	68
Huntsville	1,604	813

Kincardine	1,028	810
Kirkfield	42	41

Lucknow	571	340
---------	-----	-----

MacTier	168	128
Markdale	299	238
Meaford	1,059	831
Midland	4,558	1,826
Mildmay	235	211
Mount Forest	755	538

	H.P.	Domes- tic Con- sumers
Neustadt	90	136
Orangeville	1,149	803
Owen Sound	8,944	4,185
Paisley	205	227
Penetanguishene	1,356	910
Port Carling	183	211
Port Elgin	610	590
Port McNicoll	144	261
Port Perry	405	420
Priceville	25	48

Ripley	144	135
Rosseau	49	71

Shelburne	303	337
Southampton	680	644
Stayner	374	333
Sunderland	179	163

Tara	182	175
Teeswater	291	245
Thornbury	121	278
Thornton	43	71
Tottenham	58	173

Uxbridge	545	478
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Victoria Harbour	115	297
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Walkerton	1,289	801
Waubashene	134	260
Warton	562	506
Windermere	34	74
Wingham	1,164	643
Woodville	155	129

EASTERN ONTARIO DIVISION

(60-Cycle)

Alexandria	481	510
Almonte	689	718
Apple Hill	54	78
Arnprior	2,022	993
Athens	181	220

Bath	81	83
Belleville	9,954	4,142
Bloomfield	148	192

Bobcaygeon	234	425
Bowmanville	3,768	1,247
Braeside	293	100

Brighton	711	614
Brockville	8,854	3,339
Cardinal	398	408

Carleton Place	2,234	1,173
Chesterville	556	273
Cobden	211	198

Cobourg	2,785	1,545
Colborne	353	299
Deseronto	367	428

Finch	127	134
Frankford	244	262
Hastings	186	284

Havelock	268	316
----------	-----	-----

	H.P.	Domes- tic Con- sumers
Iroquois	367	337
Kemptville	575	425
Kingston	20,864	8,962
Lakefield	612	432
Lanark	137	198
Lancaster	83	133
Lindsay	4,484	2,405
Madoc	402	347
Marmora	197	279
Martintown	73	68
Maxville	157	196
Millbrook	187	200
Morrisburg	572	465

Napanee	1,844	979
Newcastle	336	159
Norwood	281	247
Omeme	331	198
Orono	154	199

Oshawa	24,168	7,374
Ottawa	39,756	16,317

Perth	2,339	1,200
Peterborough	21,687	8,283
Pictou	2,003	1,254

Port Hope	3,834	1,590
Prescott	1,474	851
Renfrew	1,039	1,501

Richmond	110	105
Russell	123	129
Smiths Falls	4,359	2,360

Stirling	420	305
Trenton	6,597	2,037
Tweed	463	366

Warkworth	111	162
Wellington	307	370
Westport	160	174

Whitby	1,960	1,163
Williamsburg	119	96
Winchester	542	316

THUNDER BAY SYSTEM

(60-Cycle)

Fort William	18,797	8,379
Nipigon Twp.	437	329
Port Arthur	23,385	7,257

NORTHERN ONTARIO

PROPERTIES

Nipissing District
(60-Cycle)

North Bay	6,254	3,809
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Patricia District
(60-Cycle)

Sioux Lookout	464	613
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(60-Cycle)
Sudbury District

Capreol	561	463
Sudbury	12,447	9,122

the "RED SEAL" *of approval*

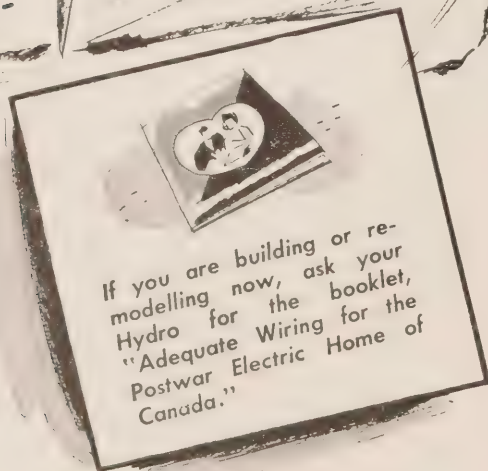
**STANDARD
ELECTRIC HOME**



Proper electric wiring makes a home easier to live with. A "Red Seal" on the main switchbox of a home, bearing the words, "Standard Electric Home", indicates that the wiring has been inspected and found to meet the minimum requirements for adequate wiring as established by the Electric Service League of Ontario.

Electric equipment is vital to modern living. Therefore, anyone building or modernizing a home, should make sure of sufficient switches, plenty of outlets for appliances and lamps, and a main service heavy enough to handle a range, a water heater, and permit free use of electric labor-saving devices and conveniences.

As a general standard, a 5-room home should have 40 to 50 outlets, counting switches. A 6-room house should have 50 to 60 outlets, a 7-room house 70 to 80. A really well-wired home will have more, but this ratio gives a practical minimum to be provided for.



If you are building or re-modelling now, ask your Hydro for the booklet, "Adequate Wiring for the Postwar Electric Home of Canada."

**THE
HYDRO - ELECTRIC POWER COMMISSION OF ONTARIO**

HYDRO *News*



"GOOD OLD
SUMMER TIME"

VOL. 35

JULY, 1948

NUMBER 7

This Is It!



THIS IS a reproduction of the award received by Hydro News in the recent International Contest sponsored by the International Council of Industrial Editors, and the second award which has been received in the past six years.

THE HYDRO - ELECTRIC POWER COMMISSION OF ONTARIO

620 UNIVERSITY AVENUE, TORONTO

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THE FRONT COVER



BIRDS, bees, flowers, the soft whisper of nodding trees, cows and horses in pastoral settings—add these together and you capture the atmosphere of summer which finds delightful expression in this month's front cover illustration. Entitled "good old summer time," this photograph was taken by Hydro News' photographer Burt Helling on Highway Number 6 between Hamilton and Caledonia.

Volume 35

Number 7

JULY, 1948

In this Issue

	Page
Mississagi River	2
Page Three	3
Reams And Reams	4
At A.M.E.U. Meeting . . .	7
Trade Fair	8
On The Beam	10
Adequate Wiring School .	11
Hydro News Award	12
Tunnel Development . . .	13
Hydro Home Forum	18
Operation Rain Maker . .	19
Dr. Urquhart's Page . . .	21
O.M.E.A. Meeting	22
This And That	22
Ear Falls Unit	23
Frequency Standardization	
(O.M.E.A.)	24
Cobalt Air Compressor	
Plant	29





SINCE CONFEDERATION

ON July 1 Canada celebrated another birthday. It was the eighty-first anniversary of Confederation. Considering the present status of the Dominion not only as a member of the Empire-Commonwealth but as the third greatest trading nation in the world the occasion was well worth celebrating. It was also an incentive to Canadians to keep to the paths which have led to progress and prosperity.

Confederation was strongly advocated by British as well as by Canadian statesmen. Before 1867 the political situation in the separated provinces had been nebulous and unsatisfactory. Government, while ostensibly representative, had been virtually by Executive Council. Confederation, while preserving allegiance to the Throne, gave to Canada herself the opportunity and the responsibility of developing within her borders those free and democratic institutions which are the cherished heritage of the British race. Moreover, it opened the door to a career of progress, which considering the vast area of the country and its comparatively small population, is perhaps without parallel in history.

At Confederation the federal government retained control of all policies and business affecting the country as a whole but delegated to the provinces powers of self-government where their own interests were exclusively involved. In general, it has worked out well, and it is difficult to see how any other system could have been better devised for a country so vast as our own.

Hydro, an organization created and designed to serve the public interest in Ontario, has been fashioned as far as administration is concerned along much the same lines. The municipalities constituting the Hydro family are, in effect, self-governing units. The Commission assumes full control in the rural field—which corresponds to the unorganized territories in the Confederation arrangement—and is responsible to the Provincial Government for the policies and undertakings which affect the system as a whole.

It was a fight for Confederation, and it was a fight for Hydro, which, in Ontario, has been largely instrumental in fulfilling the dreams of a great and prosperous Canada envisioned in 1867. It may be assumed that the Father of Hydro and the Fathers of Confederation have an interest in common as they meet together in the abodes of the blest.

HYDRO IN INDUSTRY

CANADA'S rise to her present proud position among the leading trading nations of the world can be attributed, in a large measure, to the development of her water-power resources. In industry, on the farm and in the home, electricity has come to take its place as the efficient, untiring servant of the people.

Today, in Ontario, there is an unprecedented demand for electricity. The basic industries of the province have been called upon to catch up with the tremendous back-log of production resulting from their long war-time diversion to the manufacture of arms and munitions, while the post-war demands for consumer products continue to increase.

A large percentage of the workers of Ontario are now engaged in gainful industrial pursuits. The factories where they are employed are either entirely dependent upon electricity or rely upon it for the control and regulation of their manufacturing processes.

For this reason it has been necessary for the Commission to supply the basic industries of Ontario at all seasons of the year with sufficiently adequate loads for their essential functions. This was a factor which, last winter, contributed to the need for certain restrictions in the general use of power. As the new developments in Hydro's huge construction program, now being carried out with all possible speed, come into service seriatim, the necessity for such periodic restrictions is likely to ease progressively. However, it will be well to bear in mind that pending the completion of important power developments, the co-operation of all classes of consumers in helping save power, especially during the dark days of winter, will greatly facilitate the work of Hydro and help maintain employment at a high level.

In recent months, Hydro News has published a series of articles, written by Harry M. Blake, directing attention to the widely-diversified role Hydro is playing in industry and giving first-hand impressions formed in many important plants throughout Ontario.

The development of the great basic Canadian industries is one of the romances of our country. In some lines, achievement is unique and surpasses that of any other nation in the world. Indeed, "Made in Canada" is now the mark of superior excellence for many products distributed to every quarter of the globe.

FRAMED BY the steel girders of a Bailey Bridge structure, the site of Hydro's Tunnel Development, near Thessalon, is depicted in all its rugged grandeur. Located on the turbulent Mississagi River, the development will add 42,000 kilowatts (56,500 hp) to the Commission's present resources when completed by early 1950. The main dam, with a crest length of approximately 900 feet, will span the deep gorge where the water cascades through the narrow gorge shown in the centre foreground. The right bank, at this point, will be removed to secure a solid base for the dam and also the powerhouse which will be situated at the base of the dam on the downstream side.



SULPHITE PULP slurry is passing through the headbox screens on the way to the paper machine where it will be converted into book paper.

Ontario mills contribute more than 50 percent to the production of book, writing and stationery paper in Canada. Plants located in both the Southern and Northern areas of the Province are now turning out a quality stock that equals and frequently surpasses pulpwood paper made in any other country in the world. Hydro power is intimately associated with the splendid results that are being achieved.

by
Harry M. Blake
Hydro News

Reams and Reams

NOT so many years ago Canada imported most of the finer book and writing papers. They were made from rags. Today, a publisher or a dealer in fine stationery can get almost everything he requires from Canadian mills which are specially equipped to convert "pulpwood" paper into "a thing of beauty", and in the case of books, presuming, of course, reasonable handling, into a "joy forever". This type of production has been made possible by the development of new machine processes which can be nicely controlled and regulated by the use of electrical equipment.

Ontario mills turn out more than half the book and writing paper manufactured in Canada. Latest available Government statistics show that their production in 1946 was 118,609 tons, with a value of \$16,627,644, as against a total output for the Dominion of 189,318 tons, representing a value of \$29,995,156.

Among the leaders in the manufacture of very fine papers is Provincial Paper Limited. Organized forty years ago, this company now operates five modern plants which, together, figure in a daily production of 200 tons of high grade

book, litho, bond, coated, writing and hanging papers. It has paper mills at Mille Roche and Thorold, both a paper and a coating mill at Georgetown and a plant at Port Arthur embracing paper, sulphite and groundwood mills. It leases more than 2,000 square miles of timber limits north of Lake Superior.

First Canadian Bible

While turning out a considerable quantity of stationery stock, the Thorold mill specializes in the making of book paper. It supplied the paper for the first Bible entirely made and printed in Canada. The mill is equipped with two paper machines, and the Hydro load demand is about 1,200 kilowatts or 1,600 horsepower.

Coating is extensively carried out at Georgetown. The paper designed for this process comes from the paper machines with a medium finish so that the coating or colour may be properly applied. Under electrical control, 600 feet per minute is a typical speed for raw-stock to be processed on the coating machines. The colour is applied in purposeful excess. Then the superfluity is removed with specially designed air

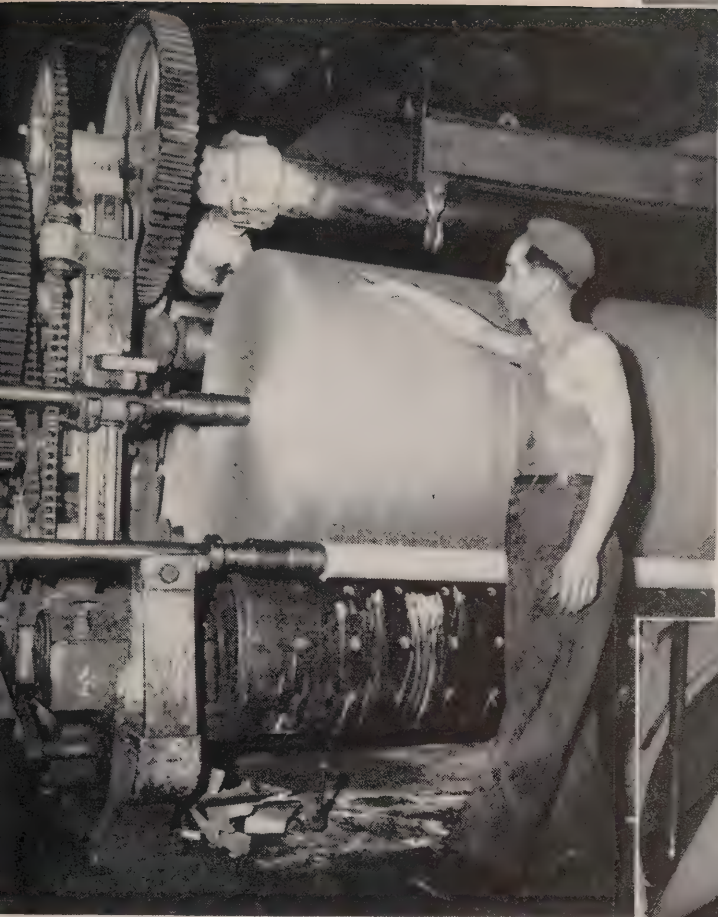
nozzles stretching completely across the web. Drying is speedily and efficiently carried out by rapid passage through a 200-foot chamber circulating very hot air. After drying the coated paper is run through a super-calender machine equipped with impression rolls of compressed cotton.

Port Arthur Plant

The company's largest plant—at Port Arthur—is supplied with power by the Commission's generating station at Cameron Falls on the Nipigon river. Peak power demands this year have been averaging 8,850 kilowatts (11,863 hp). Improvements and expansion projected for the near future are expected to call for an increase in demand of about 745 kilowatts (1,000 hp). Power is first broken down at the substation to 22,000 volts and subsequently, by the company's own transformer units, to 550 volts for mill loads.

In 1947 the Port Arthur plant turned out 31,197 tons of better quality papers, including a good deal of book stock. Lake Superior water, which is used at

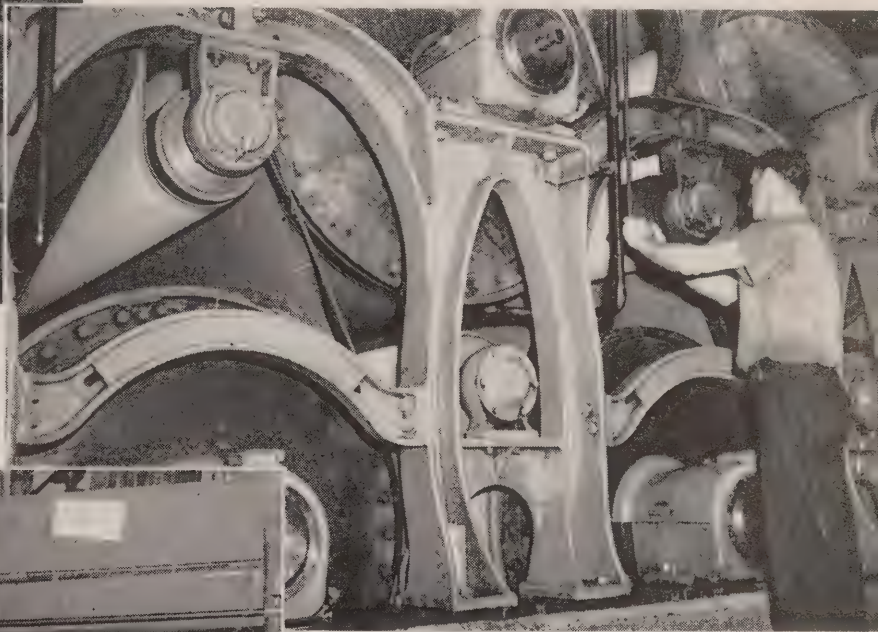
(Continued on page 6)



RED ROCK specializes in the Kraft paper used for liners and paperboard. A mammoth roll is coming off the machine.



LOCATED AT Red Rock on the shores of Lake Superior, the mill of the Brompton Pulp and Paper Company Limited has an output of 250 tons of paper a day.



ELECTRICAL CONTROLS regulate the speed of the paper machine at Red Rock. There are 325 electric motors in the mill.



INSPECTING STATIONERY paper at the Thorold mill of Provincial Paper Limited. RIGHT—Book paper ready for shipment at the Company's Port



REAMS AND REAMS

(Continued from page 4)

the rate of 12,000 gallons per minute, is said to be ideal for pulp and paper processing.

New Coating Process

There are two paper machines driven

by motorized equipment having a total capacity of 5,440 horsepower. The motors for the grinding equipment used in the preparation of groundwood for "mechanical" pulp have a combined capacity of 6,720 horsepower. The groundwood pulp is exported to the United States. The bulk of the sulphite pulp, which is turned out in much larger quantities, is either used on the premises or shipped to the company's

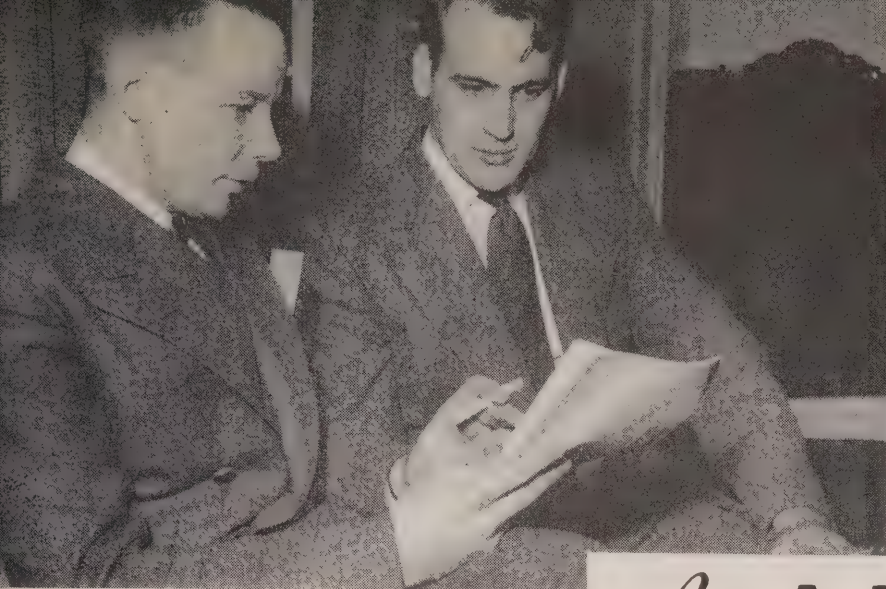
mills in Southern Ontario.

Something like 30 different grades of paper are made at the Port Arthur mill, including a coated paper which is processed by a method said to have been first introduced to Canada by Provincial Paper Limited. The coating is carried out during the passage of the sheet through the paper machine itself and not

(Continued on page 28)



THIS IS believed to be the first Bible published in Canada. It is a prized possession of Provincial Paper Limited for it was produced in 1943 at the Port Arthur mill where Hvd's power plays an important role in the various processes involved in the production of high quality paper stock.



QUITE INTENT on the program are (left) D. J. Gordon and C. H. Hopkins, while H. E. Parkinson from Forest Hill Hydro, and "Bert" Bush of Mimico, are "talking shop."

At A.M.E.U. Meeting

WHEN THE Toronto District of the A.M.E.U. had their first annual dinner at a downtown hotel recently, many problems were "ironed out" to the satisfaction of Utility Managers and Commission Engineers. Presenting a paper on distribution methods of the Toronto Hydro-Electric System, Gerald Lillie was followed on the program by R. L. Hearn, Hydro's General Manager and Chief Engineer, who outlined various phases of the Commission's operations. Following dinner, M. J. McHenry, Director of Consumer Services, reviewed for the A.M.E.U., the construction program and brought them up to date on many details. It is anticipated that other districts of the Association will be formed in the not too distant future.



"THE WAY I see it," is what J. C. Johnston of North York was beginning to tell his companions, R. H. Hillery, William Marsh and E. R. Lawler, all from Hydro's Toronto Region. At the left, are two members of the Executive of the Toronto District of the A.M.E.U.—Ronald Harrison of Scarborough and Gerald Lillie of Toronto Hydro. The President, Bob Young of Etobicoke, and Secretary C. H. Proctor of North York, were caught in the act of looking over the agenda.





There were 1,540 exhibitors.

They came from 40 countries.

Booths were ranged along eight miles of aisles in three buildings of the Canadian National Exhibition Grounds between May 29 and June 12, inclusive.

These facts, of course, are related to the Canadian International Trade Fair, the first event of its kind to be held in Canada, and one which, according to reports, will be well worth repeating.

One of the many problems confronting officials of the Fair was the supplying of electric power to meet the requirements of exhibitors from all over the world. In North America manufacturers are accustomed to single or three-phase power at voltages of 120, 208, 240, 440 or 550 volts. This is supplied at 60 cycles, except in the Niagara division in Southern Ontario, and other scattered areas utilizing 25 cycles. On the other hand, the standard, commonly used in

the United Kingdom and in Europe generally, is 230 volt, single-phase for lighting, and 440 volt, three-phase for motors, usually on 50 cycles. To determine individual requirements of exhibitors, questionnaires were sent out early in the year. It was requested that a small plan be returned showing the exact positions and capacities of the electrical outlets needed. From these individual layouts, plans were prepared and the installations made. Clearly it was a large undertaking, but, by Opening Day, single and three-phase power was available at 25, 50 and 60 cycles at various voltages, standard in America and Europe. Direct current service was

also supplied.

The lighting situation in all buildings was found to be satisfactory but it was decided to use fluorescent lighting in keeping with the modern motif of the exposition.

The comprehensive handling of the power problems of the Fair was typical of the attention paid to other details. Allocation of space was facilitated by a system of trade group classification that divided goods to be shown into twenty-two categories. A list of Toronto guest homes was compiled to accommodate those unable to obtain reservations in local hotels. Advertising was placed in the newspapers and magazines of seventy-five countries. The New York *Journal of Commerce* and London's famed *Times* devoted special editions to the Trade Fair.

To Torontonians, with whom the

(Continued on page 20)

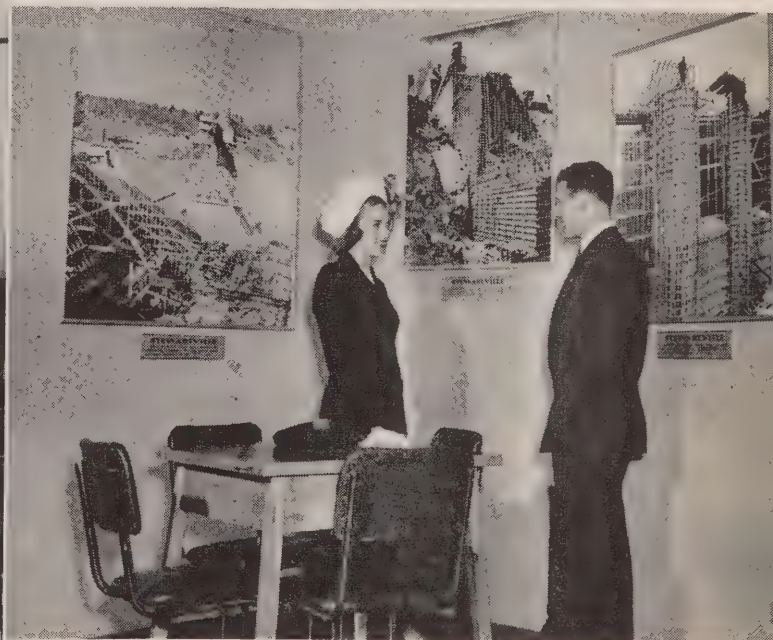
by
John A. Murphy
Hydro News



Left—THIS YOUNG couple selected a quiet corner of the lounge for a chat. In the background are photos of the huge Des Joachims project on the Ottawa River, scheduled for completion in 1951.



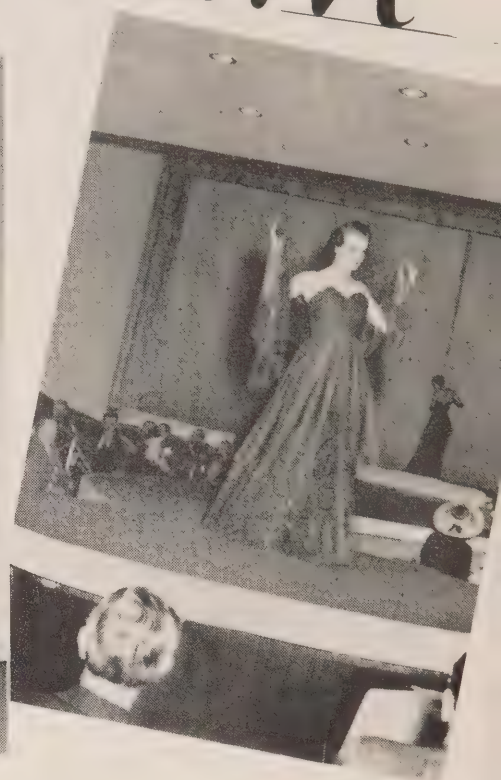
Below—ANOTHER GROUP, into which our young friends seem to have wandered, pauses before the model of the Queenston-Chippawa plant on the Niagara River.



Left—OUR VISITORS have shifted the locale of their tete-a-tete and are seen beside views of the Stewartville Development which goes into service in September of this year.

Left—HYDRO'S COMFORTABLY-appointed lounge was a haven for many a foot-weary visitor to the Fair. The three gentlemen at the right of this photo were members of a group of Cleveland business men who flew to Toronto to attend the Trade Fair.

On the Beam



FAIRLY SPARKLING under a battery of spotlights the lovely models in the Fashion Revue at the Canadian International Trade Fair held in Toronto recently, gracefully weave their way along the curving ramp. On the extreme left is a lovely satin print evening frock—just the thing for summer dances. In the centre is a fur cape with a luxurious wide wing spread, and on the right is a filmy creation of cocoa coloured net, trimmed with sequins.

With Hydro on the scene to accentuate highlights in the world of women's fashions, crowds of visitors to the Canadian International Trade Fair saw the latest in fashion trends which to all intents and purposes took a few ideas from Grandma's Sunday best.

The setting for the revue in the Coliseum at the Canadian National Exhibition grounds in Toronto, fairly sparkled under a battery of spotlights and the lovely models, each in turn, appeared right "on the beam."

With ankle-length swinging skirts, the English and Canadian models gracefully weaved and pirouetted their way along a curving ramp showing what the well dressed young lady will wear this coming Fall and Winter. Tailored and dressmaker suits; princess fitted coats and dresses of fine wools; softly styled afternoon frocks of every conceivable colour and fabric; filmy evening creations; elegant mink coats; fur capes with luxuriously wide wing spreads; casual sport clothes and enchanting lingerie were all part of the delightful panorama which held the attention of very cosmopolitan audiences.

For approximately an hour and a half each day during the two weeks of this first Canadian International Trade Fair, garments designed and manufactured in London, Paris, Czechoslovakia, New York, Montreal, Toronto and other centres elicited many "ohs" and "ahs" and expressions of approval from packed audiences. In attendance were exhibitors from about 40 countries, as well as buyers and visitors from practically all over the world.

by
Grace J. Carter
News Editor

The fashions themselves, although not lavish, were a far cry from the austerity vogue of recent years. Woollen suits of every style and colour were shown, from dressmaker types with fur peplums and two skirts (one straight and the other draped), to strictly tailored ensembles. There were coats to suit every taste and figure—some were full skirted with unpressed pleats and others were on pri-

cess lines. Dresses with rounded hip-lines and nipped-in waists in all colours and weights of wool, silks and satins were on display. Evening dresses with long, graceful, majestic lines were designed to please the ingenue, as well as the most sophisticated young lady about town. Characteristically, the sport clothes offered the maximum in smartness combined with comfort.

As might be expected, a fashion show is not all glamour, and considerable work had to be done in preparing the lighting so that the right effects would be accentuated. In order that "brighter than daylight candlepower" would be provided in all the corners, service areas and booths, it was necessary to rewire both the Coliseum and the Automotive Building. Several types of power were made available, including 25-cycle, 110 volts; 50-cycle, three phase, 550 volts; and 60-cycle.

Obviously electricity played a major role in contributing to the success of the Canadian International Trade Fair which played host to many thousands of visitors.



ADEQUATE WIRING SCHOOL AT FORT WILLIAM

THESE PHOTOGRAPHS were taken at the recent Adequate Wiring School for the Thunder Bay region, held by the Electric Service League of Ontario at the Royal Edward Hotel in Fort William. (TOP) Shown here are those responsible for the planning and conducting of the school: Standing, left to right: T. E. Dietrich, H.E.P.C.; G. W. Austen, Manager, Electric Service League of Ontario; J. A. Blay, Manager of the Promotion Department, H.E.P.C. and President of the League and A. McTavish, the League's Field Superintendent. Seated, left to right: A. W. H. Taber, Manager, J. R. Pattison, Chairman and C. H. Moors, Commissioner, all of the Fort William Hydro-Electric Commission, and F. G. Lovelady, Chairman, and R. B. Chandler, Manager of the Port Arthur Public Utilities Commission. A general view of the delegates assembled for dinner is shown centre, and the lower photo was taken while the school was in session.

Hydro News Receives International Award

TO receive an award in the International Industrial Publication Contest which is open to internal, external and other similar types of company publications throughout the United States and Canada, is an honour of which the publisher, editor and editorial staff of a magazine have reason to be justly proud.

Such an honour has come the way of Hydro News which has been placed in the "Highest Award" group with an overall rating of 96 percent in the 1948 contest.

There are over 6,000 industrial or company publications with a combined

By The Editor

circulation of over 50,000,000 readers in the States and Canada.

The contest is sponsored by the International Council of Industrial Editors with which the Canadian Industrial Editors Association is affiliated.

But to come back to the award received by Hydro News, the members of the editorial staff, whose combined efforts are reflected in the honour, are, to put it conservatively, very happy and proud at this time.

There are four heads under which publications are judged in this contest. Under the first—"Accomplishment of Purpose"—Hydro News received a top rating—40 out of 40. Under the second head—Editorial Achievement, the score was 29 out of 30. A rating of 14 out of 15 was given under the third head—Appearance Achievement, while 13 out of 15 was recorded under Production Achievement—a total of 96 out of 100.

When the office humourist saw the award, he implied that there must be some connection between Hydro power and the power of the press.

There is no doubt about one thing, however: this honour has generated a lot of enthusiasm among the members of the staff to whom tribute was paid by Robert H. Saunders, C.B.E., K.C., Chairman of the Commission.



MEMBERS OF the Hydro News' Staff along with J. A. Blay, Manager, Promotion Department, H.E.P.C., take time out to look over the "Highest Award" certificate received by Hydro News in the recent International Contest sponsored by the International Council of Industrial Editors. Those in the group are, back row, left to right, Kay Cassidy, Clerk; J. A. Murphy and Harry M. Blake, staff writers; and Burt Helling, photographer. Front row, left to right, Grace J. Carter, News Editor; William Rattray, Editor; J. A. Blay, Manager, Promotion Department; and Boyd L. Graham, Assistant to the Editor.

TUNNEL DEVELOPMENT

by
Boyd L. Graham
Hydro News

In the rugged District of Algoma, near Lake Huron's northern shore, a construction force of 500 men, aided by modern machines, is now engaged in the mammoth task of harnessing the turbulent Mississagi River at the site of Hydro's Tunnel Development.

The development is located 23 miles northeast of Thessalon and 76 miles east of Sault Ste. Marie. Preliminary surveys were made in 1939 while detailed surveying and diamond drilling were started in May, 1947. By September last year, work crews had already commenced clearing operations and building activities.

Completed In 1950

Scheduled for completion by early 1950, this new plant—one of eight which the Commission has underway—will consist of two generating units operating under a head of 210 feet, and will add 42,000 kilowatts (56,500 hp) to the Commission's present resources when placed in operation. The new plant will feed 60-cycle power into the Sudbury-Nipissing, Temiskaming and Abitibi areas—and possibly Manitoulin Island—to meet the increasing demands of industries, mines, farms and homes in this part of Ontario. This project will involve also the erection of over 125 miles of new, 110,000-volt transmission lines to the city of Sudbury where the Commission plans to build a frequency changer station to adapt power for both 25- and 60-cycle networks. The total cost of the project—\$18,960,000—includes approximately \$2,100,000 for construction of the new transmission line and over \$3,000,000 for the frequency changer station.

The long and powerful Mississagi, which in the language of the Indian means "large outlet", rises in Bark Lake and flows into the North Channel of Lake Huron near the busy lumbering town of Blind River. The Tunnel Development will span the Mississagi at a picturesque spot where the river plunges through a deep canyon whose walls of solid rock rise sharply from the river bed to a height of over 200 feet. It is from this gorge that The Tunnel Development derives its name. This project is under the supervision of Frank Grosvenor, the Commission's project engineer, while W. M. Reynolds is Resident Engineer at the site itself.

Machines and equipment of Rayner

(Continued on page 16)





At the M

1. THIS VIEW shows the upper portal of the diversion at Hydro's \$18,000,000 Tunnel Development.

2. LOOKING DOWNSTREAM toward the point where the main dam will span the turbulent river.

3. AIDED BY modern equipment, diamond drill crews are working on the walls of solid rock lining the 900-foot diversion.

4. NATURAL AND artificial light illuminate the interior of a tunnel which is 30 feet in diameter.

5. ALONG THE river bed, more diamond drill crews are working on the foundations for the main dam and powerhouse.



MISSAGI

5. THIS OUTCROPPING of rock will be blasted away as part of the operation to secure a solid foundation for the main dam.

6. LOWER PORTAL of diversion tunnel will direct water back into its natural course below construction area.

7. CONCRETE FOR the crest of the main dam will be poured into the deep cleft shown in the foreground.

8. THE IMPRESSIVE proportions of the project are depicted in this photo which looks upstream.

9. TWO OF the auxiliary buildings in the left foreground accommodate electric generators and air compressors.



TUNNEL DEVELOPMENT

(Continued from page 13)

Construction Limited, which is handling the big job for Hydro, are brought in over a provincial secondary highway running north from Thessalon. The winding road, originally built by local lumbering companies, but since taken over by the provincial government, is being widened and straightened at many points. This road extends northwest from the development to a point where it may ultimately meet another stretch of provincial road extending southward from Chapleau.

A modern construction camp has been established near the site of the main dam and powerhouse to accommodate the large staff working on the project, including engineers, diamond drill crews, office staff, kitchen help, shovel runners, drivers and laborers. The camp consists of several well-constructed huts equipped with single beds, hot and cold running water, washroom and laundry facilities, a modern, completely-equipped cafeteria which can accommodate 450, a theatre

and a hospital, as well as quarters for married employees.

In Full Swing

In recent weeks carpenters have been busy putting the finishing touches to additional accommodation for the working force which will be gradually augmented to 700 or more as construction activities accelerate.

Nearby, a steam shovel, trucks and crews of men have stripped the overburden from a 10-acre bed of aggregate for the concreting operations while the crusher equipment has been installed adjacent to this area.

From daylight to dark—and through the night, too—small trucks, sometimes called “dumptors”, have been hauling away tons of broken rock from the various points where excavation work has been in progress. The construction of Tunnel Development requires the removal of some 200,000 cubic yards of rock.

Important Hill

A steep hill forms the west bank of the gorge overlooking the site of the main dam and powerhouse. The crest of this hill commands a pre-eminent view of the project and the scenic beauty

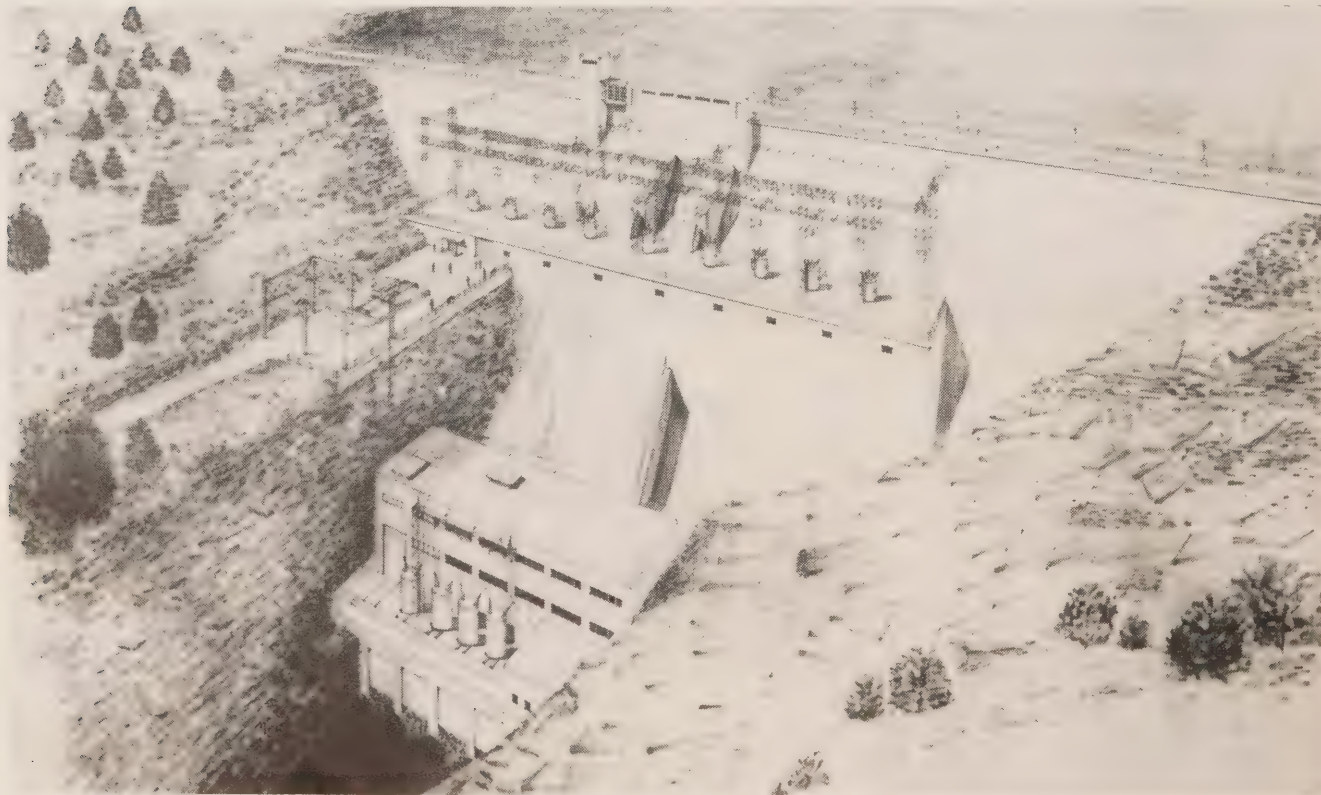
of the surrounding countryside. The camp site is situated amid a wooded grove near the foot of this hill in a broad and fertile valley which sweeps in a wide semi-circle to another line of rocky crags. The rich farmland in the valley is interspersed with evergreen and birch trees whose contrasting shades of foliage challenge the artist's brush.

Clearing 5,120 Acres

Northward a solid line of hills hems the cascading Mississagi and it is in this direction that the river will broaden out to create an artificial lake extending over 10 miles upstream, after the dam has been built. Bush crews are engaged in clearing the timber from 5,120 acres of land to be flooded when the plant is placed in operation. Their task is partially completed and trees removed from the land are being turned into finished lumber at the camp sawmill for use on the project. Bush clearing operations in the area to be inundated will be completed by May, 1949, it is expected.

The access road through the camp to the development site passes up the brow of the main hill on which several service and auxiliary buildings are located, in-

ARCHITECT'S CONCEPTION OF THE TUNNEL DEVELOPMENT



SCHEDULED FOR completion by early 1950, the main dam and powerhouse at Hydro's Tunnel Development will fit snugly into a deep gorge as shown in this architect's drawing.

cluding accommodation for the diesel-powered electrical generators and the air-compressor units. At the foot of the hill, on the opposite side from the gorge, an open-hatch conveyor system has been built and this point will be utilized for location of the aggregate stock-pile. The aggregate will drop into the open hatches of the conveyor housing on to the conveyor belt which will carry it back to the top of the hill where the mixing plant will be erected. The building of the dam, penstock and powerhouse will take more than 220,000 cubic yards of concrete and 70,000 tons of other building material. Men have cleared and levelled a space for the foundations of the concrete mixing plant at the edge of the gorge.

Main Dam

Considerable interest is focussed on this particular spot, for it is here that the main dam will span the abyss, fitting into the rocky cliffs on both sides of the river like a great concrete wedge. The solid rock which lines the sloping banks of the gorge on either side of the river has been excavated to secure a key or base for the concrete. The structure is designed to fit the entire width of the gorge from top to bottom, and will be shaped to close hard and fast on the river bed.

Across the top of the gorge, the dam will have a crest approximately 900 feet long. Measured straight up from its foundations it will have a maximum height of about 230 to 235 feet. Exact height of the structure will be determined later when drilling and blasting operations determine the depth of excavation necessary to secure a solid base in the river bed.

When completed, the massive concrete dam will contain the headworks and the powerhouse will be situated at the base of the dam. An elevator near the west end of the structure will afford convenient access to the powerhouse. To lower heavy equipment and other materials into the plant or gorge, an unloading crane will be installed on the west bank.

From the headworks, two penstocks, 12 feet in diameter, located on the downstream face of the main dam, will convey the water to the turbines in the powerhouse nestling in the gorge near the toe of the main dam. After passing through the turbines, the water will be discharged into the tailrace channel which will be excavated in the bed of the river, to a depth of 40 feet in some places, for a distance of approximately 1,700 feet downstream from the powerhouse.

Will Raise Water Level

The natural level of the river will

JAMES A. ARMSTRONG DIES AT WARKWORTH

For many years a member of Warkworth Hydro-Electric Commission, James Arthur Armstrong, died recently at his home in that municipality in his 80th year. He was also a former village Commissioner and had lived in Warkworth since his retirement from farming in 1920. Born in Brighton township on the farm settled by his grandfather, he served on the township council for several years. He was active in introducing numerous local improvements at Warkworth, including Hydro and street-paving, and he was director of Percy Agricultural Society for 50 years.

be raised approximately 185 feet when the development is in operation, creating the vast forebay mentioned above. Thus, two lateral dams will be required to close the flowage lines of the new water levels above the main dam. One of these will be constructed near the westerly end of the main dam and the other about two and one-half miles upstream. The foundations for these dams have been drilled and excavated. Storage facilities will be provided by Rocky Island Lake, 40 miles above the main dam, where storage dams will be built.

On the east side of the gorge, sluiceways of reinforced concrete will be located near the crest of the main dam. Surplus water will be discharged into an excavated channel communicating with a creek which will convey it back to the river, 3,200 feet downstream from the powerhouse.

\$13,000,000 IN REBATES

The Hydro-Electric Power Commission of Ontario returned more than \$13,000,000 to municipalities between 1939 and 1947, Chairman Robert H. Saunders, C.B.E., K.C., told delegates to the annual convention of the Ontario Mayors and Reeves Association which was held in Windsor recently. Outlining the growth of Hydro from the time the first contracts were made in 1908 for the purchase of power and the beginning of distribution services to 12 municipalities in 1910, Mr. Saunders stated that in 1947, 942 municipalities were served with a power load in Southern Ontario of 2,700,000.

Extensive construction activity has been concentrated along the east bank of the river which is reached by a steel Bailey Bridge structure thrown across the gorge at an almost dizzy height. A roadway has been gouged from the steep face of the canyon and slopes gradually to river level past the point where the main dam and powerhouse will be situated. When Hydro News visited the project the whole valley re-echoed to the reverberating chatter of air drills preparing foundations for the dam and plant while giant shovels were loading tons of loose rock into trucks. This rock had been dislodged from the side of the cliff where a deep cleft was being cut out to hold the east end of the dam. Farther upstream men and machines, dwarfed by the height of the great gorge, were digging into the top where the sluiceways will be located at right angles to the crest of the main dam.

Diversion Tunnel

During the past four months progress in the excavation of the diversion tunnel has been followed with interest as drillers bored their way through 900 feet of solid rock. The tunnel has been cut inside the west bank of the gorge, and the upper portal is connected with the roadway on the east side by means of another steel Bailey Bridge structure. Although a pilot hole was driven through from end to end, by means of a vertical shaft 119 feet in depth, all excavation work was carried on from the upper portal as the steep face of the gorge at the lower portal made it impossible to work both ways.

Employing mining tactics, the contracting firm of Miners Inc., of Toronto, have driven a tunnel—30 feet in diameter and wide enough for two trucks to pass each other—through the solid rock to divert the river above the site of the main dam and powerhouse while actual construction is taking place. With its mouth upstream from the main dam site, the tunnel will carry the water around the construction area and back into the natural course of the river downstream. A cofferdam will be built to dewater the bed of the river and force the water into the tunnel. The upper portal of the tunnel will be faced with concrete and fitted with steel gates which will be dropped and a concrete plug poured in behind these gates to seal off the tunnel when the project is completed.

Completion of the diversion tunnel marks the end of an important chapter in the story of The Tunnel Development where construction is gaining momentum. The next phase will be the pouring of concrete for the dam and powerhouse which is expected to commence shortly.



Hydro HOME FORUM by Edithemmu Muir

HOME ECONOMIST

Electric fans are at their busiest these hot summer days. Yours will do best placed on a table two to five feet above the floor, and about eight to ten feet from the occupants of the room. During a hot, still night, place the fan on a table in front of an open window, facing outward. If you open other windows or an outside door of the room, a fan placed in this position will drive out the warm air and draw in the cool air to replace it.

* * *

The ingenuity of some people! Last week we saw a unique necklace, and staring at it noticed that the owner had rolled pieces of foil into inch wads for the beads. Holes had been hammered through each and then the balls were strung together. Fastened by tying the ends of the ribbon in a bow, this original string of beads was much admired.

* * *

Bread keeps fresh at least a week when stored in the electric refrigerator. Always slide the loaf back into the waxed wrapper and fold in the open end. If bread becomes too firm, wring out a steaming wet cloth and place over sliced pieces for 2 or 3 minutes.

* * *

Every short-cut helps. For example, sift and measure dry ingredients such as flour on waxed or brown paper instead of using a bowl. Then too, beat up the egg and milk mixture in one of those colourful pyrex mixing bowls; add rice and cook in that bowl—also serve from the bowl.

* * *

There are two kinds of prune whip . . . with gelatine and refrigerator chilled; without gelatine and baked in a moderately slow oven. In either variety we suggest adding raisins or nuts to the prune mixture. The egg yolks should be used in a soft custard sauce which is chilled before serving with either type of pudding.

BLUEBERRY MUFFINS

- 2 $\frac{2}{3}$ cups flour
- 1 cup fresh blueberries
- 2 tsp. lemon juice
- 2 $\frac{2}{3}$ tsp. baking powder
- 1 egg
- 1 cup milk
- 4 tbsp. melted butter
- $\frac{1}{3}$ cup granulated sugar
- $\frac{1}{8}$ tsp. salt

Sift flour once and measure. Add lemon juice and salt to the berries. Combine with $\frac{1}{3}$ cup flour. Sift remaining flour with baking powder and sugar. Beat egg, add milk, then flour all at once. Mix just enough to distribute liquid. Add butter and fold in berries. Bake in small greased muffin tins, 10-15 minutes in moderately hot electric oven (350 degrees).

* * *

ICED RICE PUDDING

- $\frac{1}{4}$ cup rice
- 2 $\frac{1}{2}$ cups hot milk
- 3 egg yolks
- 1 cup sugar
- $\frac{1}{2}$ tsp. vanilla
- 1 cup cream (whipped)

Wash rice. Cook in double boiler with milk, until soft; press through a sieve. Cook eggs, sugar and milk mixture as a soft custard. Cool and flavour. Freeze to a mush, beat well and fold in whipped cream. Fill a melon mould; pack in ice and salt, or freeze in electric refrigerator. Unmould on serving dish; garnish with fresh fruit.

* * *

The pleasure of eating at such immaculate cafeterias as those at our Hydro developments is something about which to write a story. We wish to compliment the girls who work quickly, quietly and deftly about the dining room, and the men who do such a spick job on a camp floor.

Pomanders were used by my grandmother in the clothes closets. It was

usually an orange completely studded with cloves, bound with ribbons and tied in bows; then hung in the big wardrobe. In comparison we release streamlined bombs placed in the closets and the rooms of the house as moth and insect preventatives. They are more effective but certainly are not considered decorative!

* * *

Brides should have no compunction about exchanging gifts that will or cannot be used. If you have been given four casseroles without covers, exchange one for a covered dish and another for a glass pie plate with a "crust" edge.

* * *

That brown, toasted flavour is put into oatmeal drop cookies when the oatmeal is roasted in the electric oven for a few minutes before it is stirred into the batter. It does add to the flavour.

* * *

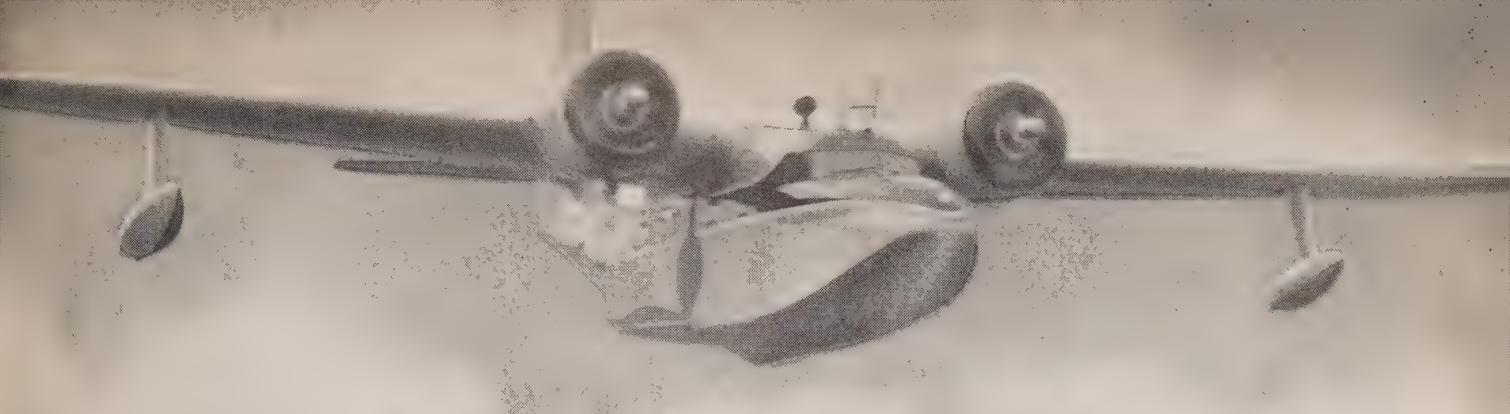
Cottage cheese is a favourite food for summer meals. It's made just the way Granny used to make curds: Heat one quart sweet milk until lukewarm. Add one rennet tablet dissolved in one tablespoon cold water. Set in a warm place, undisturbed, until firm. Pour into a sieve lined with cheesecloth. Drain thoroughly, reserving curd. Mix curds well, season with salt and moisten with cream.

* * *

Vary cottage cheese according to plate being served. With fruit salad add $\frac{1}{4}$ cup mixed peel or $\frac{1}{4}$ cup chopped nuts. As sandwich filling add $\frac{1}{2}$ cup India relish, or on a cold vegetable plate combine with raisins and grated carrot.

* * *

Here is a laundry hint. If washable silks and cottons absorb an excessive amount of perspiration, it is wise to rinse the garment in cool water before placing in suds.



OPERATION

BY THE EDITOR

Hydro's amphibian plane switched over from its regular role of helping speed construction of new power plants to that of a cloud-combing rain-maker engaged in the concerted effort to fight the forest fires which have been ravaging vast areas of Northern Ontario.

The Hydro plane was used in co-operation with planes of the Department of Lands and Forests in the grim, all-out battle against the fire fiend. Commission Chairman Robert H. Saunders announced that the plane has been made available for the dual purpose of helping stop the tremendous loss of forest wealth and to hasten resumption of all construction operations at Hydro's Tunnel Development on the Mississagi river, a few miles away from the fire area.

Approximately 80 men engaged on construction work at this new plant were mobilized and served on the fire fighting front.

In a telephone interview, while his plane was awaiting arrival of further supplies of oxygen at Sault Ste. Marie, Mich., L. J. "Red" Rogers, pilot of the Hydro plane who served for five years in the R.C.A.F. Transport Command during the war and who is a former jet plane test pilot, told a graphic story of the Northern fire scene and of rain-making action at an altitude of 16,000 feet over the crimson, smoke-billowing terrain below.

On instructions from Mr. Saunders, the Hydro plane with "Red" Rogers at the controls, left Toronto on June 12 at 1 o'clock and one hour and fifteen minutes later, arrived at Sudbury, where necessary adjustments were made in the plane before going into action. The

aircraft is a G 73 Mallard and can accommodate 10 passengers and a crew of 2. It is powered by two 600-horsepower Wasp H engines and has an overall length of 48 feet.

To prepare it for its mission, the two rear seats and the circular window in the door were removed. A short piece of stove pipe was placed in position through the window to serve as a chute for the dry ice pellets. Some 600 pounds of ice in cartons of various sizes were loaded on to the plane. This work completed, "Red" Rogers, accompanied by K. G. Pettit of the National Research

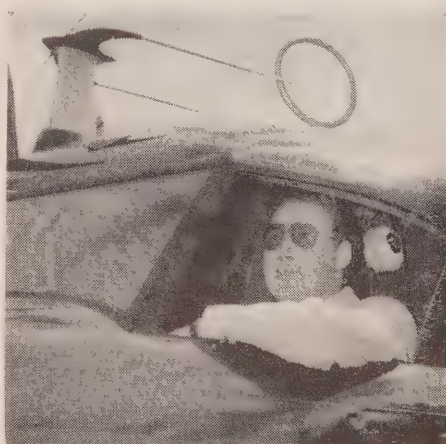
Council, Ottawa, took off and, flying at an average speed of 180 miles an hour, proceeded to the Chapleau-Mississagi area where two of the largest fires had joined and were ravaging some 30,000 acres of forest land. Flying at an altitude which could not be attained by the forestry planes with such a heavy load—between 12,000 and 16,000 feet—the Hydro plane, with its occupants using oxygen, rose high above the clouds and would then bank down as close as possible to cumulus formations with Mr. Rogers releasing a steady stream of dry ice pellets into the clouds. It was estimated that the craft had covered between 700 and 1,000 square miles in four hours of continuous flying.

That the operation was a success was indicated by the heavy rain which fell over the fire area following the flight.

Sault Ste. Marie, Mich., pilot "Red" Rogers reported in the telephone interview, proved to be an ideal base for the operation. Additional supplies of oxygen were flown to this base, while 1,200 pounds of dry ice were held in storage nearby. During each mission, the plane's radio was turned in so that messages from personnel of the Department of Lands and Forests and from Hydro's Administration Building in Toronto could be relayed quickly.

"We did not expect to extinguish the fires," said "Red" Rogers, "but we hoped to be able to dampen the ground so that the fighters could get in."

The general opinion of competent authorities on the spot, he stated, was the forest fires could be attributed to 90 percent carelessness and negligence on the part of irresponsible individuals.



PILOT "RED" Rogers at the controls of Hydro's amphibian plane.

TRADE FAIR

(Continued from page 8)

word "Fair" is synonymous with the Canadian National Exhibition or the Royal Winter Fair, it seemed strange that admission to the Trade Fair was by invitation. The general public was admitted only on Saturdays. This measure was adopted to give exhibitors and buyers the maximum opportunity of getting together under the most favourable circumstances. It might be noted in passing that on the three days that the public were admitted they thronged the buildings and kept exhibitors busy answering a barrage of queries as to where their goods could be purchased.

Flags Of Exhibiting Countries

One of the most arresting features of the Fair was the main entrance at the Coliseum. Here the visitor passed under a gleaming facade of shining, fluted aluminum, 60 feet high, surmounted by the flags of all the countries exhibiting. To round out this eye-catching array, two members of the Royal Canadian Mounted Police, in their traditional scarlet coats, were on duty throughout the day at the main entrance. These two stalwarts spent many hours posing for the cameras of thousands of visitors, often on either side of a pretty young lady.

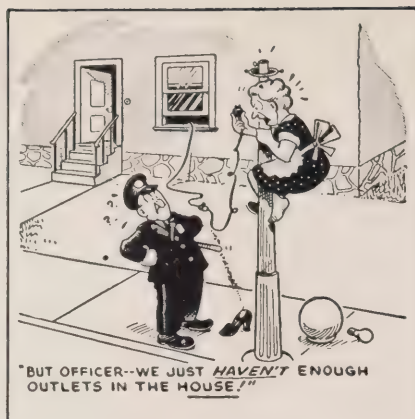
The main reception centre was located inside the main entrance. Here everyone was registered and provided with a guide book and official badge. The badges were distinctly coloured according to whether the wearer was an exhibitor, guest or official, and soon became familiar symbols in the hotels and restaurants about the city. Also in attendance at the reception desk were qualified interpreters from the Foreign Service in Ottawa to handle any language difficulties that might arise.

Another show piece of the exposition was the International Club where the fashion show was a daily attraction. Here, in a cosmopolitan setting, surrounded by specially-painted murals of Canadiana, could be seen a bevy of Canadian and British beauties wearing the latest creations from the glamorous, and sometimes bewildering realm of feminine fashion.

In addition to the International Club, four other restaurants provided facilities for a "quick bite" or a leisurely dinner in the most pleasant surroundings.

Replica Of Princess' Watch

Elsewhere throughout the show was an all-encompassing display of manufactured goods from the four corners of the earth. Swiss watchmakers proudly



O.M.E.A. EXECUTIVES VISIT DES JOACHIMS

Several members of the executive of the O.M.E.A., accompanied by W. Ross Strike, K.C., Second Vice-Chairman of the Commission and Dr. Otto Holden, Assistant General Manager—Engineering, recently viewed at close range the progress being made at the largest of Hydro's eight postwar power developments—Des Joachims—on the Ottawa River, 38 miles upstream from Pembroke. Members of the party, who paid a flying visit to the development site, included: Loftus H. Reid, Chairman of the Toronto Hydro-Electric System; George F. Hutcheson, Huntsville, President of the O.M.E.A.; Mrs. K. Kestell, Guelph, Secretary-Treasurer; C. J. Halliday, Chesley; A. O. Leslie, Scarborough Township, and N. Roy Pierson, Brantford Township.

exhibited a replica of the diamond-set wrist watch given to Princess Elizabeth as a wedding gift. After the Fair, the second watch was to be dismantled so that Her Royal Highness will have the only one in existence. Other booths displayed fine textiles, glassware, everything in fact from handkerchiefs to automobiles and railway coaches.

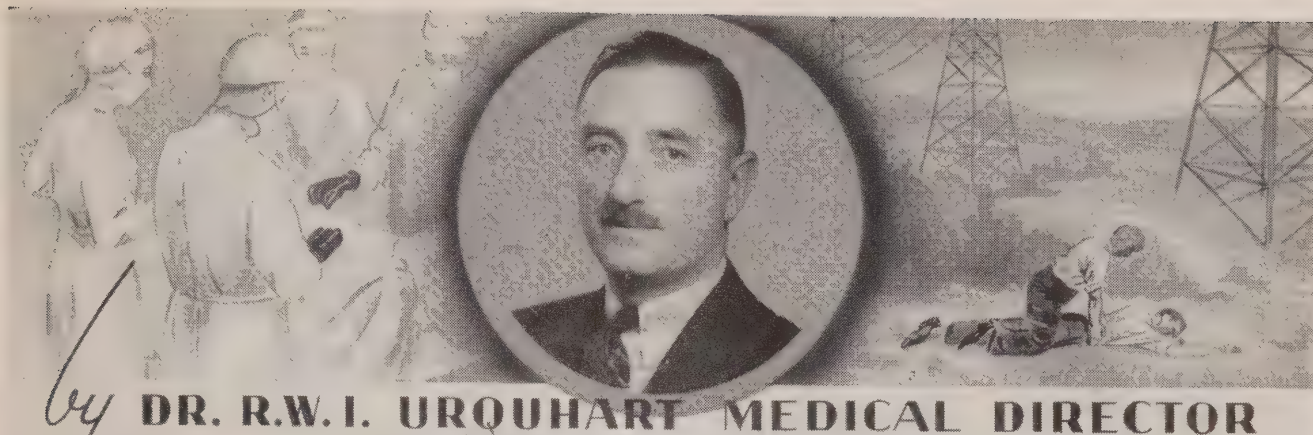
At the conclusion of the Fair, and even while it was still in progress, speculation was rife in the press as to its being a success or failure. Certainly many exhibitors did offer criticism, but for the most part it was of a constructive nature. Perhaps the best indication of the success of Canada's first Trade Fair lies in the fact that plans are already underway for another one next year. With the experience gained from this year to act as a guide, the 1949 Trade Fair should be an event of even more significance than its predecessor.

SCIENTIST DISCUSSES RAIN-MAKING THEORY

The subject of rain-making is one of much controversy in meteorological circles these days. With a view to getting a little inside information on the subject, Hydro News had a chat with a gentleman who has done considerable delving into this rather clouded issue. Our informant, who remains anonymous at his own request, offered the following semi-technical explanation:

"The exact nature of the process or processes which cause a cloud to release rain or snow is not understood. However, it appears that one such release process, which operates in many cases, is started by the simultaneous presence, in the same part of the cloud, of water droplets and ice crystals. The vapour pressure over liquid water is much greater than that over ice at the same temperature. This results in a rapid transfer of water from the liquid droplets to the ice crystals, through the vapour with a consequent rapid growth of the ice crystals. When the growing ice crystals become sufficiently large they fall. If the temperature at lower levels is high enough, melting occurs and rain results, if the temperature is low, snow may fall. It appears then that rain may be produced if a cloud becomes 'seeded' with ice crystals, by some natural means or by some outside agency. It is on this assumption that recent 'rain-making' experiments are based. Solid carbon dioxide (dry ice) is dropped into the cloud to produce a refrigeration effect with the results described above".

The aforementioned process was the one followed by the Hydro plane with "Red" Rogers at the controls. As described elsewhere in this issue, preliminary attempts appear to have been successful. However, with the scepticism of the true scientist, our informant, who, we suspect, hails from Missouri, adds this footnote: "Precipitation release experiments have been much too few in number to permit of any conclusions. It does appear clear, however, that clouds can, under some as yet unknown circumstances, be modified." As a concluding reproof to those of us who visualized ordering in advance the weather for our next vacation, our friend says: "It is not yet established whether such rain would or would not have fallen in the ordinary course of nature." There he goes again, dampening all our enthusiasm.



DR. R.W.I. URQUHART MEDICAL DIRECTOR

HOLIDAYS

The word holiday is, as might be expected, a variation of Holy Day. Holidays have been common to almost every civilization throughout the ages. They have been days of exemption from the usual occupations of the people and have been used for a variety of purposes. The Greeks for instance used these days as occasions for sport and competitions. The Romans put on great exhibitions in their many amphitheatres. The Jews had the Sabbath and other fast days for religious ceremonies. In the early Christian era they became days of abstinence and devotion, and so Holy Days.

Man throughout the years, therefore, seems to have recognized the importance and necessity of regular holidays. Irrespective of the purpose to which they were put, they were days of change of occupation—a break in the usual daily routine.

In modern times there has been somewhat of an increase in the number of these holidays through the year. The institution of the "Bank Holiday" for example and the choice of certain days of national significance for celebration, has been governed to an extent by the desire to provide a free day, at regular intervals, for rest and social recreation. These are of course, in addition to the ordinarily observed religious days. It is interesting to note that many of these days have been designated as compulsory holidays. There is of late a tendency to place the holiday at the week end. This is perhaps a development of the motor age when so many people travel long distances to holiday resorts. There can be no question that such holidays are of great value from the health point of view.

Increased Tension

There is undoubtedly an increased tension in life in these modern times. These

tensions are not all due to the nature of the individual's employment. Many are due to the complexities of life in modern urbanized civilization. They are felt by everyone from the busy executive, with the responsibilities of vast financial or industrial organizations on his shoulders, to the most junior clerk or labourer with the simplest of routine duties. Both need release from routine and time for rest and relaxation.

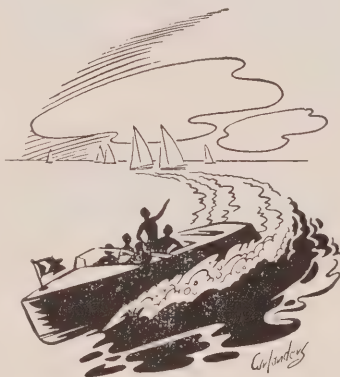
To an extent this opportunity is provided through the compulsory holidays provided by the laws of the land. It is

important that they be observed. Some individuals have become so involved in their manifold duties that they have felt it necessary to continue working throughout these holiday periods. One has seen too many of these succumb to physical or nervous disorder. As a result their contribution to the total effort has been decreased rather than increased by their zeal. Other individuals engage in physical activity on these days. This is all to the good provided it is not carried to excess. The sedentary worker who tries to accomplish a week's physical work at home on the holiday is asking for trouble.

Weekly Holiday

If the regular weekly holiday is of value, how much more so is the annual holiday of reasonable duration. The majority of people take this holiday in the summer months and spend the greater part of it outdoors. The revivifying effect of such a holiday is known to most of us. It is particularly valuable because it is usually enough for one to get entirely away from the problems of one's ordinary occupations. Many have remarked that it takes the better part of a week to get really relaxed, and in some cases this is undoubtedly true. The individual who does not take such a vacation usually pays up for it in the end. In the long run it is false economy to do without the annual vacation. It should be a period of re-creation as well as recreation.

When you do take your holiday remember that there are certain hazards connected with it. Sunburn for instance can be disabling. Water and milk supplies should be carefully looked into if you go away from home. Food should be carefully chosen and kept properly if the summer diarrhoeas are to be avoided. A holiday to do you good must be free from disaster. Let us hope you enjoy yours.



FACTS ABOUT CANCER

Canada's Health And Welfare, a monthly bulletin issued by the Department of Health and Welfare, announces that a Public Affairs Pamphlet, *Facing The Facts About Cancer*, by Dallas Johnson is now available at 25 cents. Any persons desirous of bringing themselves up to date on the presently known facts concerning cancer can secure this interesting booklet by writing to the Canadian Forum Book Service, 16 Huntly St., Toronto.

#his and #hat

TWO OF our readers suggested that we might devote this space to a commentary on the soccer game between Liverpool, the noted English team, and Ulster United played at Maple Leaf Stadium, Toronto, on June 15. We are very happy to undertake the assignment for we have been interested in this sport since we could kick a ball. At the same time, during our early years in Canada we not only played but, as a newspaperman, we covered all important games between British and Canadian teams.

We mention this merely to indicate that we are in a position to offer our impressions of the recent game as compared with former games.

It was interesting to note that the sell-out crowd at Maple Leaf Stadium on the evening of June 15 included many Hydro folk.

But to come to the game itself: The final score was Liverpool 5, Ulster 1. We noted that our former newspaper associates and good friends, Ed Waring and Hal Walker of The Globe and Mail Sports Staff, were inclined to use superlatives in their commentaries on the game. We do not see eye to eye with these gentlemen. It was a good game and we thought that the Ulster boys acquitted themselves quite creditably against their more polished opponents. However, we have seen exhibitions between British and Canadian teams that were much more thrilling. During the ninety minutes, the Liverpool lads did show flashes of that soccer finesse and artistry of which they are capable. For the most part, however, they gave us the impression of exercising only the minimum of effort necessary to hold the eager Ulsterites in check. There were many glaring errors of judgment but these could be attributed, in part, to the bad ground. Maple Leaf Stadium, in our opinion, is not a good soccer pitch, particularly at the west end where the baseball diamond is marked out.

While there may have been good reason for making Maple Leaf Stadium the venue, we have always held the

opinion that important soccer games should be played at Varsity Stadium where the two memorable games between the Touring Scots and Ontario were played.

The errors in judgment to which we referred were made in particular by the Liverpool inside forwards and halves in passing to their wings. The passes seemed to be badly placed and too fast, and quite frequently the finishing and shooting near the Ulster goal was very weak. It's not usual for a crack team to make so many errors in one game. In fact this year's exhibition was very poor by comparison with the game played by the Liverpool team of two years ago in Toronto. The 1945 game was a brilliant display of soccer. It is quite possible, of course, that this year's edition of the Liverpoolians found it difficult to settle down against the bustling, never-say-die type of game played by Ulster.

by
The Editor

The defenders on both teams, in our opinion, completely outclassed the forwards on the night's play. Sidlow, the Welsh international, in the Liverpool goal, rose to the occasion in a very literal sense when the Ulster forwards threatened. The visiting backs, Harley and Lambert, played an outstanding game. Liddell, who played at outside right for Liverpool, is no stranger to Toronto fans for, during the war, he played a number of games for Toronto Scottish while in this country. While he figured prominently in all the scoring plays, the Scottish international, like the other forwards, showed only flashes of his true form. We had heard a great deal about Stubbins at centre forward. But on June 15, Mr. Stubbins had an off night and didn't appear to be "clicking". Ken Brierly, the 22-year-old outside left of Liverpool, did demonstrate one of

two reasons why the Liverpool club paid Oldham Athletic \$28,000 for his services.

All in all, the Liverpool players were prone to keep the ball too much in the air. The headwork was nice to watch at times but the short passing game is much prettier and much more effective on a hard, dry ground. The marked distinction between the English and Scottish style of soccer is that the former swing the leather more from wing to wing while the Scots usually slip the ball along the ground and make ground with some very fine pattern plays. All too frequently the ball was booted out of play for throw-ins during the Liverpool-Ulster game.

To come to the showing made by Ulster we have no hesitation in saying that every man on the team "worked his head off" and none was over-awed by the class of the opposition. Gage in the Ulster goal could not be blamed for the five shots which got into the net. Few, if any, goalkeepers could have stopped them. That great veteran, Davidson at right back for the Irishmen showed his usual fine form throughout. In the forward line we thought Varlev at outside right, and Axe in the inside position, played very fine soccer. Time and again they gave the Liverpool defenders some anxious moments. It's a pity that their finishing had not been a little stronger.

We repeat that it was a good game but not by any means the best we have seen. Possibly the most memorable game we can recall was that played between the famous Glasgow Rangers and a selected Ontario team about 1928. We can still recall the thrilling exhibition given by Alan Morton, the Rangers' international outside left. That was a game that had the spectators on their toes from start to finish.

With more and more people coming to this country from Britain we should be able to build up some fine soccer teams here and we certainly hope that we shall have the opportunity of seeing many English, Irish, Welsh and Scottish teams in action on Canadian soil.



Install Fourth Unit at Ear Falls Plant

These photographs direct attention to Hydro's Ear Falls development on the English River in Northern Ontario where workmen are busily engaged in putting the finishing touches to a fourth generating unit which has been added and will be placed in service this month. The picture on the left shows the extension to one end of the powerhouse to accommodate the new generator and turbines. On the right, A. W. Manby, Assistant General Manager—Administration, and R. L. Hearn, General Manager and Chief Engineer, look over one of the units at Ear Falls. The new unit will generate an additional 5,500 kilowatts (7,500 hp), making a total capacity of 18,750 kilowatts (25,000 hp) at this plant. Construction for the new generator which began in January, 1947, has included a reinforced concrete extension, 44 feet long and 79 feet wide, at the easterly end of the powerhouse. Installation of the necessary facilities for the additional unit has also entailed construction of two rectangular reinforced concrete penstocks, approximately 120 feet long; additional tail-race excavation downstream from the powerhouse, and an addition to the erection bay at the west end of the powerhouse, 40 feet long by 45 feet wide. Cost of the whole project is estimated at about \$1,500,000. The opening cere-

mony at the Ear Falls development this month, which will mark the beginning of another important era in the history of this plant, will be attended by government and Hydro officials, as well as representatives of mining and other interests and members of the press, it is expected. The Commission delivered the first 60-cycle power from the Ear Falls development in 1929 when the capacity was only 3,750 kilowatts (5,000 hp). Additional units have been placed in operation subsequently, in order to keep pace with growing demands. Since the third unit was added in 1940, the demands have increased rapidly with the mining industry creating the biggest load of any of the consumers served, including mining properties in the Red Lake, Woman Lake and Pickle Crow areas and four townsites, the C.N.R. at Sioux Lookout and paper mills at Dryden. This increase in the consumption of power for mining is reflected in the peak load figures which have jumped approximately 45 percent since 1945. This substantial rise in power requirements of this area has necessitated the installation of the fourth unit at Ear Falls, which, when placed in operation shortly, will be fed out over three great arteries of power across some 300 miles of bush to serve a growing number of consumers.

Endorse Frequency Standardization At Special Meeting of O.M.E.A.

ENDORSATION of the principle of frequency standardization in the Southern Ontario System was recorded at a special meeting of the Ontario Municipal Electric Association in the Royal York Hotel, Toronto, on June 21.

A roll call vote was taken with 49 municipalities, having a total of 395 votes, favouring standardization, while 21 municipalities, with a total of 124 votes, opposed the motion, which was presented by Mayor Hiram McCallum, a Commissioner of the Toronto Hydro-Electric System, and seconded by F. Pownall, Chairman of the Mimico Public Utilities Commission. The motion read as follows:

"RESOLVED: That we the Executive of the O.M.E.A. hereby endorse the principle of frequency standardization in the Southern Ontario System, asking however that the H.E.P.C. give consideration to any recommendations which may be passed on to them from time to time by the O.M.E.A. regarding changes in the proposed methods of financing various phases of this undertaking."

There was considerable discussion before the vote was taken and a number of the delegates expressed the view that they did not object to cycle standardization but they did object to the way in which the matter had been handled. Others in the 60 cycle areas did not think they should be burdened with added costs, and the suggestion was made that each municipality pay for its own as it went along.

Mayor McCallum representing the Toronto Hydro System read an extract from the minutes of the last meeting of the Toronto Commissioners in which they expressed themselves in favour of frequency standardization for the following reasons:

"It is the standard frequency of North America. In Canada alone the installed 25 cycle generating capacity approximates only 20 percent of the total.

"Adoption of a standard frequency would permit free interconnection of

action is projected far into the future the consumers of the system will reap benefits greatly outweighing the cost of conversion, even should these estimates prove to be too low, and that the proper time to put the conversion in hand is now."

H.E.P.C. Unanimous

Robert H. Saunders, C.B.E., K.C., Chairman of The Hydro-Electric Power Commission of Ontario, told the delegates that the Commission was unanimous in the belief that standardization of frequency was not only desirable but essential to the economic welfare of the Province.

"I did enjoy the meeting this morning," remarked Mr. Saunders, "because, inwardly I was having quite a laugh upon hearing the H.E.P.C. criticized for making a decision on standardization of frequency. Today, the H.E.P.C. is being criticized because it made up its mind. I well recall that at past meetings of this association when I was in your position as a member hearing the Hydro criticized because it did not make up its mind. In fact, I am very conscious of the criticism that was levelled at the Hydro because I was one of the critics. Two years ago I urged Hydro to make up its mind. We have made up our minds, gentlemen. I should like to tell you on what basis our minds have been made up."

Continuing, the Chairman recalled that as a member of the Toronto Hydro-Electric System that he had advocated that frequency standardization for On-

(Continued on page 26)

BY GRACE J. CARTER, NEWS EDITOR

the various systems and avoid the inconvenience and annoyances caused the customers moving from one frequency area to another.

"Industrial motor equipment, transformers, etc., are smaller, lighter and cheaper at 60 cycles.

"Modern lighting equipment operates more satisfactorily at 60 cycles."

Mr. McCallum also read an extract from a report submitted to the Toronto Commissioners by the General Manager, E. M. Ashworth, as follows:

"I do not think there is any question that a 60 cycle supply is better than a 25 cycle supply and that if the trans-

Must Save Power During Winter Months

While new power resources, available this year, will come close to meeting the increased demands over the past twelve months, they will not meet any part of the backlog in increased demands or build up any reserve supply of power. For that reason, it will be necessary to again conserve power during the coming fall and winter months.

An announcement to this effect was made by Robert H. Saunders, C.B.E., K.C., Chairman of The Hydro-Electric Power Commission of Ontario, at the special meeting of the Ontario Municipal Electric Association on June 21. The Chairman stated that consideration was now being given as to what form restrictions might take.

He pointed out that the increase in demand in May of this year as compared with May, 1947, amounted to 102,438 kilowatts or almost 6 percent. The present estimate indicated that the December, 1948, peak would exceed the December, 1947, peak by 101,572 kilowatts (135,432 hp)

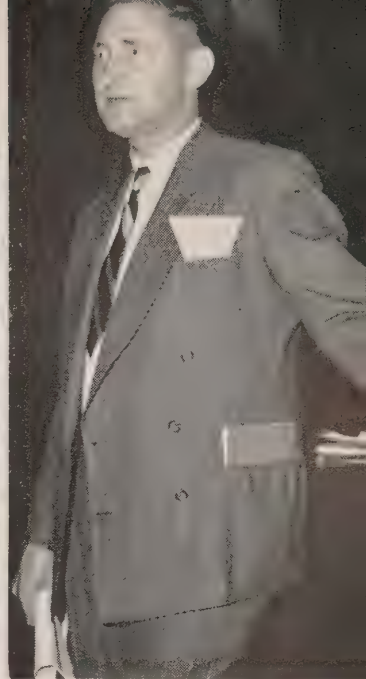
or 8.77 percent. As against this, he said, it was anticipated that, by January 1949, there would be an increase in resources of 100,000 kilowatts (133,000 hp) because of the opening of the new Stewartville plant with its 60,000 kilowatts in September, and the delivery of 19,500 kilowatts from the Polymer steam plant at Sarnia about October 1, 1948. The additional 20,000 kilowatts, he pointed out, would be made available through reduction in time losses due to the construction of additional lines.

Mr. Saunders said that he hoped everyone would co-operate. Industry, he pointed out, could assist greatly by staggering some of its working periods.

"If we could only cut out the waste," he added, "there would be sufficient power for all."

It was the intention of the Commission, he said, to start very shortly an educational program to enlist the co-operation of everyone, and particularly industry, to eliminate waste in the use of power.

ROBERT H. SAUNDERS, C.B.E., K.C., Chairman of The Hydro-Electric Power Commission of Ontario, told the O.M.E.A. delegates that the Commission was unanimous in the belief that frequency standardization was not only desirable, but essential to the economic welfare of the Province. Seated on the Chairman's right is G. F. Hutcheson of Huntsville, President of the O.M.E.A.



WARREN P. BOLTON (above) Chairman of the Windsor Utilities Commission (Hydro Division) was one of the delegates who voiced his opinion on frequency standardization.

LOOKING OVER the frequency standardization report this trio from left to right are: W. N. Powell and T. A. Andre of Kingston Public Utilities Commission, and Frank H. Plant, Ottawa Hydro-Electric Commission.



MORE THAN 300 delegates attended the meeting. These three representatives are, left to right, O. R. Burr, Tom Prudence and F. G. Tigwell, all from the Point Edward Hydro-Electric System.



ENDORSE FREQUENCY

(Continued from page 24)

tario be undertaken as quickly as possible. His opinion at that time had been based on advice received from the General Manager and staff of the Toronto system. At that time, he pointed out, they had studied the advantages that would come with such a change.

Opinion Strengthened

"I can assure you," declared Mr. Saunders, "that the change in my position has not changed my opinion in this regard. On the contrary, that opinion has been strengthened. I find that the advantages enumerated at that time are borne out by the opinions of the engineering and technical staff of The Hydro-Electric Power Commission of Ontario, and also by the experts retained to study the question."

The Chairman next outlined advantages and disadvantages in the lack of standardization and enumerated the following points:

(a) Lack of 60-cycle power throughout Ontario has deterred and will deter industry from locating in this province.

(b) The greater availability of 60-cycle consumer equipment. This has become more important with standardization in other areas, principally at Buffalo.

(c) Obtaining the full benefit of research and development in the United States which, of course, is largely undertaken in connection with 60-cycle power.

(d) There are important advantages to industry in the use of machine tools.

(e) Interconnection with other 60-cycle systems would provide a source of emergency power during short service interruptions.

(f) Access to other markets for the sale of surplus power may provide an important hedge against unexpected reductions in demand or a lower rate of growth than anticipated.

(g) In the event of war, interconnection with other 60-cycle systems might be of great importance, particularly if power plants are destroyed or damaged.

(h) Domestic and other consumers moving into or out of the present 25-cycle area would be able to re-install their appliances without cost and without delay.

(i) 60-cycle power has numerous advantages for lighting purposes.

Opportune Time

At this point, the Chairman said: "The next question—should the change take place at this time? If possible, definitely yes. The Commission, during the next five years, will add to its system a total of 1,347,000 horsepower

in generating stations (exclusive of the St. Lawrence), at a cost of \$210,947,000, and the present is certainly the opportune time to standardize. If these new generating stations are installed at 25-cycle, and later changed to 60-cycle, the cost would be utterly fantastic—in fact, it is definitely now or never. It seems to be perfectly obvious that if the change can be made, then now is the time."

The Hydro Chairman said that two questions remained. Could standardization be accomplished from a technical standpoint, and secondly, was it possible to finance the expense. To deal with the technical aspects, he said he had read the report of Messrs. Stone and Webster Engineering Corporation, and of Mr. Harold Hobson, British Consultant, very thoroughly. Stone and Webster, he said, concluded their report with the words: "There are no insurmountable difficulties to the execution of the proposed conversion program from a technical point of view. Other conversions of a similar character have been made with success. It is, therefore, recommended that the proposed conversion program be adopted and started as quickly as possible, assuming, of course, that it is possible to finance the expense."

Financial Aspect

Coming to the financial aspect of frequency standardization the Chairman said they had had an abundance of advice from those who should and do know. One of the most outstanding firms of accountants in Canada had been retained to make the financial study, the firm of Clarkson, Gordon and Company. Not only was this firm outstanding in its field, but it was significant when one realized that that company had audited books of Hydro since its inception, with the exception of a nine-year period. That firm, therefore, was familiar with and had the responsibility to see to it that the financial affairs of Hydro were protected.

Mr. Saunders next directed attention to the report of Harold Hobson, former Chairman of the Central Electricity Board of Great Britain and one who had had first-hand experience in the extensive program of frequency standardization in England. The Chairman read the following extract from Mr. Hobson's report.

"The extensive investigations which have now been concluded show clearly that the conversion of the system to 60-cycle, in conformity with the rest of the American continent, can be carried out without serious dislocation of supply, and that the savings directly attributable to the conversion during some 18 years following completion will equal the whole cost of the work. Moreover, the program of conversion can be financed without any direct increase in

the price of power and with contribution from industrial consumers substantially less than the value of the benefits which they will receive.

"Were this opportunity to be lost it is, in my view, unlikely that a sound financial case for conversion could be made at any time in the future. It is, therefore, my strong recommendation that the conversion program should be undertaken forthwith along the lines proposed in the report of Stone and Webster and Clarkson, Gordon and Company."

Discussed With Advisers

Mr. Saunders, continuing, said that during the past three months the Commission had discussed the question with their advisers, and they had agreed, without exception, that not only was the program possible and advisable from a technical standpoint, but they also agreed with Clarkson, Gordon that it certainly could be done from a financial standpoint without any ill effect on Hydro finances. Mr. Saunders said that he had also taken the liberty of asking for the opinion of his predecessor, Dr. Thomas H. Hogg. The latter, too, was definitely of the opinion that they could and should proceed as quickly as possible with the conversion.

R. L. Hearn, the Commission's General Manager and Chief Engineer, at the outset of his address said that the use of electric power in Southern Ontario since 1910 had passed through two distinct phases, caused undoubtedly by changing economic conditions and the appreciation of its value to industry, agriculture and to society in general. It might now be said that it had entered into a third phase which was by far the most interesting and involved.

The General Manager said that the first phase had occurred during the first 10 years of Hydro and terminated during the First Great War. The second phase began after the First Great War and had been stimulated by the development of industrial uses and the introduction of appliances into the home. The third phase, he continued, which was now upon them, would appear to be the most important and far-reaching in the history of power in the Province of Ontario.

Industrial Development

Mr. Hearn stated that the development of this third phase had been brought about by the following factors:

"(1) By the rapid industrial development made necessary in order that we might survive the Second World War and help in the rehabilitation of the war devastated countries of the world.

"(2) By the rising costs of coal and oil fuels, bringing a BTU, the unit of heat for coal and oil, much closer to the cost of a BTU of electricity—in

fact, in many cases at the present time the BTU of electricity is equal to or less than that produced by the use of coal or oil.

"(3) By the rapid expansion of the use of electric energy on the farm to compensate for the scarcity of labour and to increase the production of food.

"(4) By the ever-expanding use of electric appliances in the home.

"It seems to me that in viewing the picture with respect to adequate power supplies for the future," continued Mr. Hearn, "one must look at the problem from the point of view of the province as a whole. No longer are we able to visualize the power resources of the Niagara, the St. Lawrence or the Ottawa Rivers as being the ultimate in the matter of development for Southern Ontario; the vast regions of the north must be taken into consideration in any plans that are contemplated for the future.

"Let us take a look for a moment at the Province's power resources. On the Niagara and St. Lawrence Rivers there are developments that may be relied upon to give their full output twelve months in the year and twenty-four hours of the day. On the other hand, practically all other present and future developments in the Province are on rivers that are bound to fluctuate from month to month and from year to year, depending upon the climate with its varying rainfall, snowfall and yearly evaporation. It is, therefore, necessary at this time for the Commission to lay a proper foundation for the most economical use of the Province's water powers, developed and undeveloped. System facilities must be provided that will permit the transfer of power in large quantities from one section of the Province to the other, with a view to making the most economical use of all our resources.

Seasonal Variation

"The use of electric power in Ontario has a seasonal variation necessitating, in the interest of the general economy, the transfer of energy from one section of the Province to the other in order to effectively utilize unused energy which will be made available at Niagara and the St. Lawrence plants at certain times of the day, the week and the month. As an example, there will always be available large quantities of unused energy on Saturdays, Sundays and holidays, and there will also be large quantities of unused energy during the six summer months. The problem therefore of making the most effective use of this energy is dependent upon storage in one form or another.

"It is obvious, therefore," continued the General Manager, "that trunk line transmission lines, which would convey energy during these periods to areas supplied by low load factor developments,

thus permitting these developments to be closed down for part of the day, will account for more economical operation of the system in future. An example of this occurred during the past winter when energy from the large plants on the St. Lawrence and Niagara Rivers was actually carrying a load that was normally taken care of by Chats Falls development and other plants tributary to the Ottawa. This operation permitted the closing down of the Ottawa River plants during the night and week-end periods, which in a great measure assisted in carrying the industrial loads of the Province during the working week days. As the Commission's system grows, greater facilities must be installed which will permit this method of system operation to be expanded and make more efficient use of the water supplying the generating stations throughout the Province from east to west and from north to south."

Power Displacement

Continuing, Mr. Hearn said: "Another phase of system operation requiring very careful consideration is power displacement or power wheeling which might be defined as using the resources of one region to supply industry in another region, and, conversely, using the energy developed in the second region to supply the third region. This scheme is of vital importance to the general economy of the Province as a whole and will become increasingly important in the event of the development and use of higher voltage transmission lines. It is interesting to note that experimental work is going on at the present time in the United States on transmission voltages as high as 500,000 volts, and also in Sweden a proposal has been made to construct 400,000 volt transmission lines or greater from the northern part of the country to the industrial area in the south, a distance of approximately 600 miles. These higher voltages will permit power to be transported longer distances and will help solve the problem of our ultimate conception of Ontario's power system being an interconnected system stretching from Quebec on the east to Manitoba on the west and from James Bay on the north to Niagara on the south. The economics of this scheme are obvious, especially to the Province of Ontario, which has such scanty resources of its own either in coal or oil.

Interconnection Is Vital

"Another major consideration, of course, is the ability to physically tie the Commission's vast resources with those of Manitoba, Quebec, the State of Michigan and the State of New York, and it would appear therefore that interconnection with these systems is of vital importance not only in peace time but

of great importance during war. It is necessary, therefore, to reflect on the question of frequency standardization in order to make the full and effective use of our waterpowers. In this province three frequencies now exist which limits greatly the very necessary interconnections with the neighbouring States and provinces and nullifies in a large measure many of the economies which could be introduced and which are absolutely necessary in our economy. This brings us to the point of looking at the present picture and comparing it to the ultimate development which will take place in this province within the next few years, and our present great expansion has compelled us to examine the matter of frequency standardization since the end of World War II.

Continuing, the General Manager pointed out that at the present time the Commission has 2,170,890 horsepower of hydraulic power developed in the province. Of this figure 1,591,800 is 25-cycle. "If all the waterpowers in the areas of expected expansion were developed and harnessed," said Mr. Hearn, "and were within reasonable transmission distance of the areas in which power will be used, there would be a total turbine capacity of over 7,000,000 horsepower. It will thus be seen that a relatively small proportion of the total is 25-cycle, and since all of our neighbouring States and Provinces are already standardized at 60-cycle, it seems obvious that we must get in step in order to realize the benefits that will accrue to the Hydro system by the standardization of frequency with the North American Continent."

Load More Than Doubled

"It was mentioned earlier in my remarks that we are now into the third phase in the use of hydro-electric power in this province, and in this connection I wish to point out the loads in kilowatts used by Hydro in Southern Ontario between the years 1937 and 1947:

	Kw.
1937 -----	957,000
1942 -----	1,454,830
1943 -----	1,516,695
1944 -----	1,526,464
1945 -----	1,604,734
1946 -----	1,833,993
1947 -----	1,926,128

"You will note that the Southern Ontario System has more than doubled its use of electric power in a period of ten years, or an increase of approximately 1,000,000 kilowatts. At this rate of growth we may expect before many years have passed to seriously consider tapping other resources which are not located in Southern Ontario.

"Some may ask the question as to why we may expect further load growth,"

continued Mr. Hearn. "Are we industrialized to the fullest extent, or in other words are we nearing saturation? In answer to this, I do not think we are anywhere near the saturation point for two reasons. If you will examine the imports of manufactured goods into Canada you will find that this country is altogether too great a purchaser of manufactured goods in relation to its own natural resources or population. As an example, the present steel production in Canada is about 3,000,000 tons per annum and the consumption is 4,000,000 tons per annum, which means that we must purchase from outside sources about 1,000,000 tons per annum of steel for our own consumption, and this in a country rich in iron ores. Furthermore, the 1941 census of this province showed that there were 3,788,000 people resident in Ontario, and a careful estimate of the 1947 census shows that the population is now in excess of 4,200,000, or an increase of over 10 percent in that short period of time.

1941 Census Ontario	-----	3,788,000
1943 " "	-----	3,917,000
1944 " "	-----	3,965,000
1945 " "	-----	4,004,000
1946 " "	-----	4,107,000
1947 " "	-----	4,189,000

"If more people locate in Ontario, it means the more rapid development of the natural resources and greater consumption of electricity in manufacturing and in the home, and consequently we must be ready at all times to develop and deliver more and more power to the people of this province in future years. This, together with greater social uses in the home and its application in agriculture, is and will be the force that will help to make Ontario great, not only in industry but also in agriculture.

Paramount Importance

"Therefore," said the General Manager, "in reviewing the general situation regarding the power resources for this Province for the next decade or so requires very careful consideration of the general situation over the entire province and, with these facts before us, the Commission and its engineers have come to one conclusion and that is, it is of paramount importance to the general welfare of the Province to have a standardized frequency in order to effectively develop and operate economically the power resources of the Province. With this end in view, a complete and exhaustive study of the many factors entering into the changing of the 25 cycle system to a standard frequency of 60 cycles has been made, both by the Commission's own engineering staff and by consulting engineers who have been retained by them for this purpose. The reports from both these bodies have been in your hands for some time.

"These reports, with which you are

T. C. JAMES PASSES

TUDOR CONWAY JAMES, formerly System Engineer in the Municipal Department of The Hydro-Electric Power Commission of Ontario, died at his home on July 3.



In ill health for some time, Mr. James retired a few months ago. While on the Hydro staff he was in charge of the Northern Ontario Properties, the Georgian Bay and Thunder Bay Systems. In this capacity he was largely responsible for the

negotiations leading up to the tremendous growth in Hydro load in the mining areas of Northern Ontario. Before joining the Commission in 1912, he supervised the building of the Toronto distribution system.

Mr. James was a Past Principal of Beaches Chapter R.A.M.; a member of Delta Masonic Lodge; Association of Professional Engineers; the American Institute of Electrical Engineers; Electric Club of Toronto; and on the directorate of the Engineers Club. He was an extremely active member of St. Aidan's Anglican Church and held the office of sidesman for many years.

Born in Coaticook, Quebec, he later spent some time in different sections of the United States. When he moved to Toronto he resided at the Beach and took a keen interest in community affairs. He was an ardent golfer and up to the time of his illness was a member of the Scarborough Golf and Country Club. His main hobby was gardening; taking particular pride in his roses which won him many prizes.

familiar, all sum up to the one conclusion and that is that it is feasible to make the changeover from 25 cycle to 60 cycle, both from a technological and financial point of view.

"I do not propose to deal here today with the detailed items in these reports," stated Mr. Hearn, "but I do wish to say that the staff of the Commission, including the speaker, have spent much time and study on this problem of conversion and have gone over very carefully in detail the various reports ourselves from the Commission's consultants and we are unanimous on this point. Frequency standardization is essential to the future development of the Province's power resources and should be done without delay, and we have so recommended to the Commission."

REAMS AND REAMS

(Continued on page 6)

afterwards, as at Georgetown, and most other coating mills. Special equipment somewhat resembling the rolls of a printing press have been installed for this purpose and the paper formed at the wet end of the machine, after passing through them, is dried, as in the case of newsprint, by running over stacked cylinders.

About 80 percent of the total production at the Port Arthur plant is taken up by the domestic market and the remaining 20 percent exported. Ten percent of the export is made up of actual finished paper shipments which go principally to British Empire countries but also to South America and Egypt. It was pointed out by A. G. Scott, the company's Assistant Manager of Manufacturing at Port Arthur, that now Canadian mills are equipped to turn out such high grade paper, the chief factor which operated against the building up of a large export business was the tremendous increase in domestic demand. He hoped that with the speeding up of processes and more available power, it would be possible to look forward to further expansions in foreign business.

On an average approximately 1,200 men are employed at the five mills of Provincial Paper Limited. During the season of greatest activity in the woods a much larger number is engaged.

As has been shown in this series of articles, the Canadian pulp and paper industry covers the entire range of paper manufacturing in most comprehensive fashion.

At Red Rock, picturesquely situated on the rocky shores of Lake Superior between Port Arthur and Schreiber, the mill of the Brompton Pulp and Paper Company Limited is engaged in the manufacture of kraft pulp for paper and paperboard.

Power for the 250-ton daily production is supplied by Hydro's Cameron Falls station. Peak demand for the mill's 325 motors averages about 5,970 kilowatts (8,000 hp).

For the manufacture of some grades of board groundwood can be added to the kraft stock. To supply this required groundwood, a groundwood mill is being installed which will go into operation when more power is made available by the new Hydro developments in the Thunder Bay District. The increased power requirements, it is estimated, will be approximately 3,360 kilowatts (4,500 hp).

The Company has laid out an attractive townsite at Red Rock for most of its 400 mill workers and by the end of this summer there will be 182 houses in the townsite.

Cobalt Air Compressing Plant



The column of water spurting skyward in the above photo is not to be confused with "Old Faithful", the renowned natural geyser in Yellowstone National Park. As a matter of fact our little water spout cannot even be classed as a natural phenomenon, being strictly a man-made affair.

What our camera has recorded is the excess pressure being blown off at the hydraulic air-compressing plant at Ragged Chute, on the Montreal River near Cobalt, Ontario. Here the waterfall is approximately fifty feet. The installation, erected in 1910, consists of a vertical intake shaft through which water from behind the dam drops 345 feet then flows on a level for 1,000 feet before rising 300 feet to the tail race.

The principle of operation is simple: Air is introduced at the top of the intake shaft and carried down with the water. Along the horizontal level the air rises from the water and is drawn off through a dome at the top of the horizontal section, a short distance upstream from the vertical discharge shaft.

The result of this intricate arrangement of shafts, water elevations, and air intakes results in the delivery of compressed air at 120 pounds per square inch. This is reported to equal hydraulic power of 5,500 horsepower. Simple isn't it?

The water spout in the picture? It occurs when the air pressure in the horizontal shaft and dome exceeds 120 pounds per square inch. The water is then depressed until the air and water escape through a blow-off pipe.

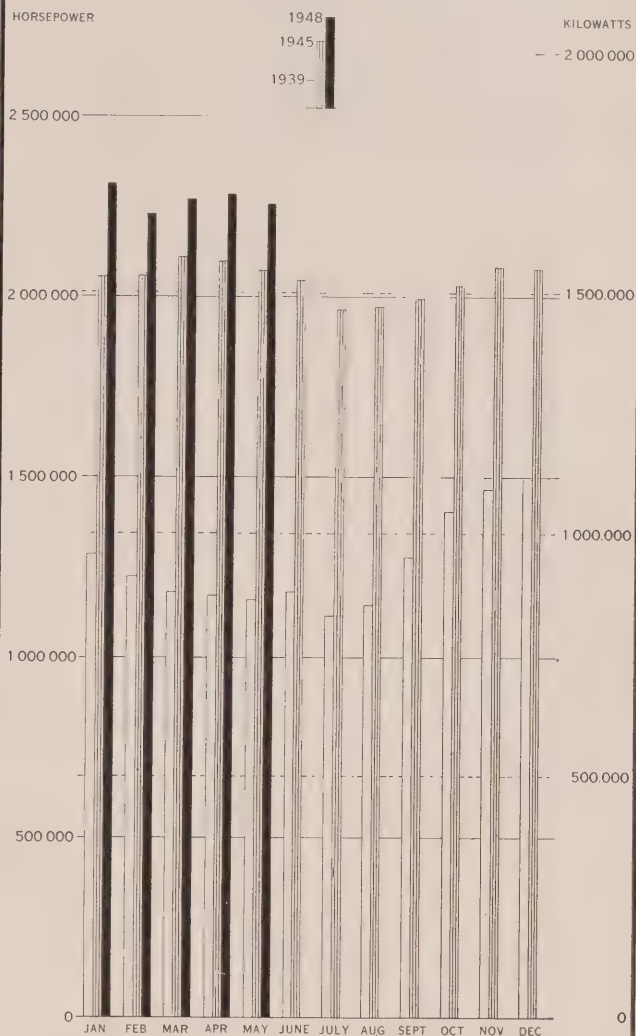
ENTHUSIASTIC RESPONSE

Regarded as a record in financing, the \$40,000,000 bond issue, placed on the market by the Commission on June 18, was absorbed by the public one hour after the issue was announced.

The bonds were placed on public sale through a large syndicate of banks and investment dealers, the issue consisting of three percent bonds, dated July 2, 1948, and due July 2, 1964, which were offered to the public at 99 to yield 3.08 percent.

SOUTHERN ONTARIO SYSTEM EMBRACING NIAGARA GEORGIAN BAY AND EASTERN ONTARIO DIVISIONS

PRIMARY LOAD



POWER DEMANDS AND TOTAL GENERATION

AREA SERVED BY	MAXIMUM 20-MINUTE PEAK KW		PER CENT INCREASE
	MAY, 1948	MAY, 1947	
PRIMARY DEMANDS — ACTUAL LOADS PLUS CUTS			
SOUTHERN ONTARIO SYSTEM	1,833,648	1,732,062	+ 5.9
THUNDER BAY SYSTEM	115,530	110,100	+ 4.9
NORTHERN ONTARIO PROPERTIES	191,120	177,351	+ 7.8
TOTAL	2,140,298	2,019,513	+ 6.0
TOTAL GENERATION — INCLUDING POWER PURCHASED			
SOUTHERN ONTARIO SYSTEM	1,709,483	1,619,322	+ 5.6
THUNDER BAY SYSTEM	116,030	113,500	+ 2.2
NORTHERN ONTARIO PROPERTIES	243,410	227,961	+ 6.8
TOTAL	2,068,923	1,960,783	+ 5.5



HAPPY HOLIDAYS!

The lakes and streams and forests of holiday land are yours to enjoy . . . and yours to protect from their greatest enemy, fire.

Most forest fires are started by human beings. Thousands of acres are blackened and destroyed every year because someone was not careful with fire.

When you use a match, break it in two before you throw it away. Be sure your discarded cigarette is out too.

When you make a campfire, build it small and in a safe place.

When you leave, put the fire dead out with water.

What forests do for you :

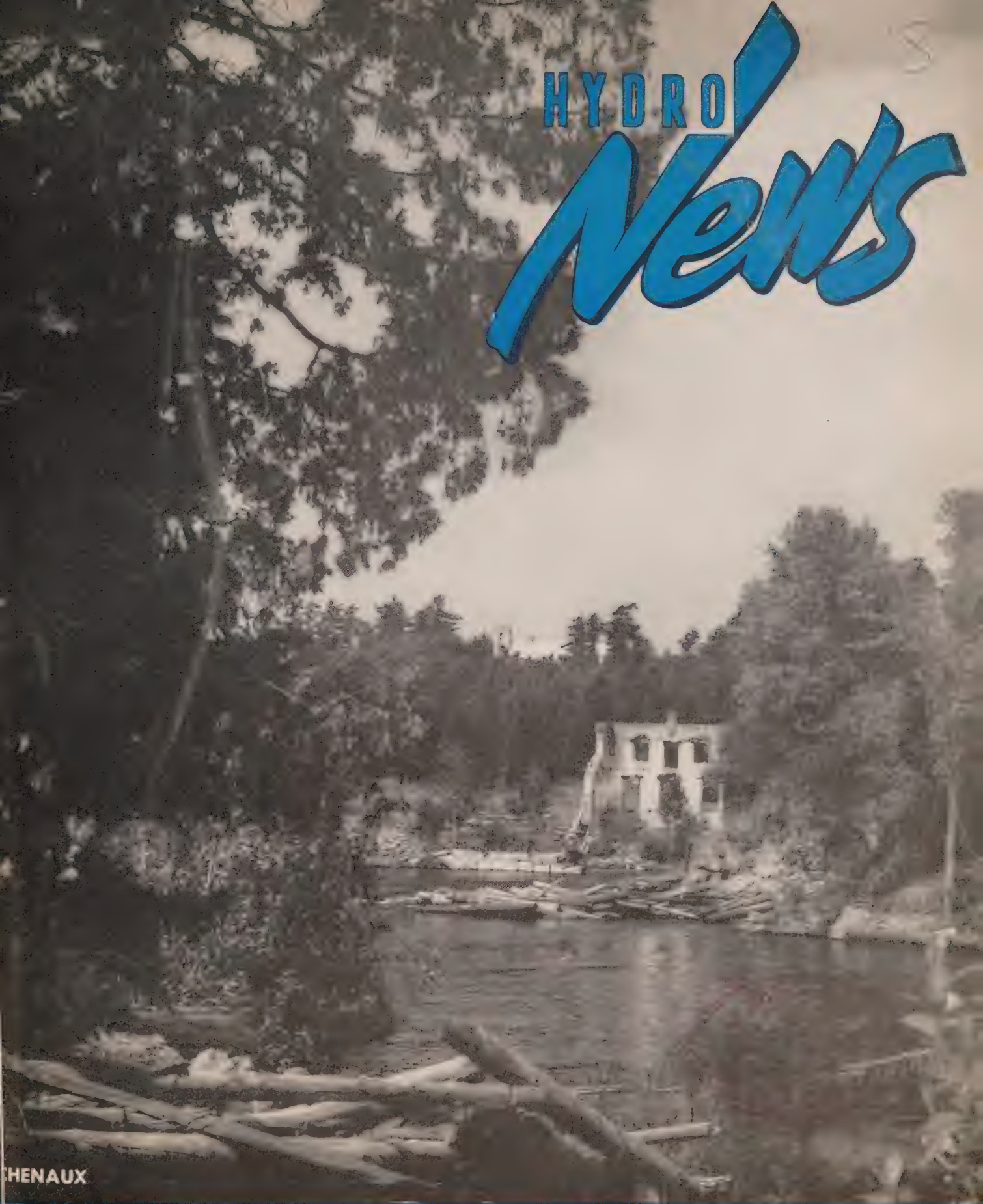
- Give you a grand place to holiday.
- Provide beauty spots for our visitors.
- Shelter game animals and fishing haunts.
- Control flow of water . . . help even the flow of rivers so they do not dry up in summer.
- Help to ensure a year-round supply of Hydro power for you.
- Provide thousands of jobs in lumber, pulp wood and other forest industries.
- Influence climate so as to prevent extremes.

Enjoy your Holidays but protect our Forests



THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

HYDRO *News*



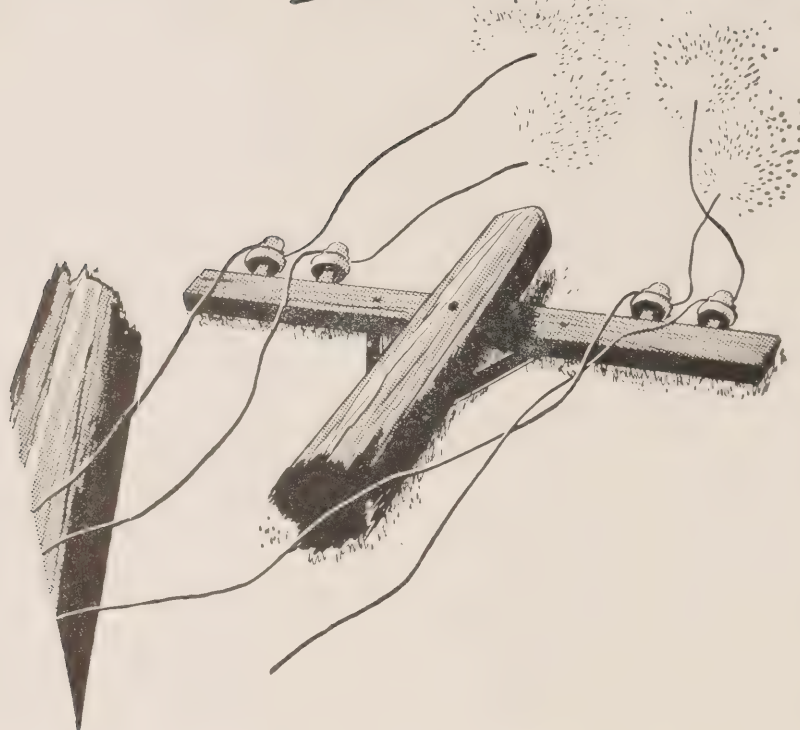
CHENAUX

VOL. 35

AUGUST, 1948

NUMBER 8

The only safe way . . .



Never touch a fallen Wire!

Wind, snow and sleet break down electric wires sometimes in spite of every precaution. Shock or severe burns can result from touching such a wire. Never touch a fallen wire.

Warn children not to go near fallen wires . . . but do not risk a demonstration by trying to move one out of the way. It can be fatal!

Remember these three things if you discover an electric wire on the ground or dangerously low:

1. Do not touch the wire under any circumstances;
2. Stay on guard and keep everyone away until Hydro men arrive.
3. Have your nearest Hydro office notified at once.

Everything possible is done to keep Hydro wires safe in your community. Some things . . . winter storms and human folly . . . are beyond control. When these things occur, Hydro asks your co-operation in being careful and in warning others. By doing so you may save a life.



THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO



THE HYDRO - ELECTRIC POWER COMMISSION OF ONTARIO

620 UNIVERSITY AVENUE, TORONTO

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THE FRONT COVER

AT CHENAUX, where Hydro will construct a 119,000 kilowatt (160,000 hp.) development, the Ottawa river divides into two island-studded channels. Taken by the Commission's photographer, Burt Helling, this pleasing view, with its touch of rustic beauty, shows the Portage du Fort channel looking towards the Quebec side. One of the side dams for the power project will be built in the immediate neighbourhood.

Volume 35

Number 8

AUGUST, 1948

In this Issue

	Page
Princes' Gate	2
Page Three	3
Ear Falls' Fourth Unit	4
Hydro's Chairman	8
Hydro Extends Lines	9
Vital Power Link	12
Dr. Urquhart's Page	15
Porcelain Policemen	16
Niagara	20
Hydro At The "Ex"	24
Hydro Home Forum	26
Around The Hydro Circuit	27
This And That	29
Lighter Lines	31
Hydro's Linascope	32
Galloway Power Scheme	33





A WELL-KNOWN landmark, both in Toronto and abroad, is the Princes' Gates at the eastern entrance to the Canadian National Exhibition. These gates were completed in 1927, when the Duke of Windsor, then Prince of Wales, accompanied by his brother, Prince George, officiated at the opening ceremony.

* Page Three *

RURAL HYDRO SERVICE

ON the mixed farms which are so typical of Ontario, electricity is rightly regarded not only as a chief factor in improving living conditions, but also as an aid to production.

The foundations for the present large-scale programme of rural development were laid between 1926 and 1931 when, through the construction of the Queenston station and the completion of waterpower developments in various parts of the province, the Commission was enabled to turn its attention to this important activity. In the five years ending in 1931, no less than 6,000 miles of rural line were added to the 2,000 miles which had been built during the first twenty years of the Commission's existence. By 1941, at a time when Hitler's invasions had cut off practically all food supplied from Europe to Britain, a total of 20,000 miles of line were serving the farms and rural communities of Ontario, and obviously accelerating production in many ways.

Further construction was restricted by war-time regulations. As a result, at the cessation of hostilities, the Commission was faced with an unprecedented demand for electricity in the rural field. Immediately, a Five-Year Plan of construction and extension was undertaken to meet these demands and bring the benefits of Hydro to rural communities throughout Ontario.

While shortages of materials retarded this plan in its initial stages, that situation has progressively improved. With the exception of steel, construction material is now in fairly good supply, and during the past few months Hydro has been speeding up its rural programme. Approval has been given for the construction this year of 3,533 miles of new rural line. If this goal is reached—and there is a possibility it may be exceeded—a total of 6,352 miles will have been built since the inauguration of the Five-Year Plan. This will exceed the original 1945 estimate for new line construction to the end of 1948—including the emergency building during the last year of the war—by 534 miles. It is hoped, by the end of next year, not only to catch up on previously planned construction, but to pass the mark envisaged for the Five-Year Plan.

A GREAT EXHIBITION

ONCE again, on August 27, the gates will open on the Canadian National Exhibition. Until they close on September 11, Exhibition Park, Toronto, will be the mecca for countless thousands of visitors as well as for every man, woman and child in the Queen City who can drive, walk, hop or hobble to the grounds. And it does not matter how many times you have seen the world's greatest annual exposition, for the "Ex" is like Cleopatra—"Age cannot wither her, nor custom stale her infinite variety."

We all know now that Toronto has a flair for organizing good shows and we can see that the Exhibition was assured of success from its very beginning in 1879. Even in the "horse and buggy days" there was nothing quite like it. There were exhibits from every land on the face of the globe, and grand stand entertainments and pyrotechnical displays that outrivalled anything of their kind on the American continent. Toronto's great fair had long merited the accolade before it received the title of Canadian National Exhibition in 1912.

In this business of keeping the Exhibition up-to-date—and perhaps just a little ahead of other exhibitions—Hydro has been of invaluable assistance. With the aid of electricity, all the fascinating machinery of modern invention can be shown in realistic action, while demonstrations can be given in connection with exhibits that formerly could be only inertly displayed. Through the use of electricity during the 14-day period of the "Ex" no exhibit is obscurely placed, while visits to the buildings may be made at any hour under equally satisfactory conditions. Colourful electric lighting gives a romantic allure to the grounds at nighttime while providing ample illumination. In the many restaurants and booths Hydro provides the power for the multitudinous catering arrangements. And—to crown all this year—the new grand stand, with its seating capacity of more than 22,000, will be provided with batteries of flexible electric lamps of ultra-modern design for flood and spotlight purposes.

Hydro congratulates the Canadian National Exhibition on the achievements of the past. It is proud of the part it has been called upon to play in its progress and development. May this year's "Ex" surpass all records.



TOP LEFT: Hydro's Ear Falls power plant, located on English River, 90 miles north from Dryden.

BOTTOM LEFT: While Commission Chairman Robert H. Saunders, C.B.E., K.C., watches, Premier George A. snaps on the switch which sets in motion the fourth unit at Ear Falls.

ABOVE: Little boy meets big generator — the new fourth unit at Ear Falls.

Fourth Unit at Ear Falls Opened by Premier Drew

The rugged, spontaneous enthusiasm and fine esprit de corps which seem to be synonymous with the people of Ontario's great North and the progressive and invigorating environment in which they work and live found full expression July 27 when Premier George A. Drew officially opened the new 5,500-kilowatt (7,500 hp) unit at Hydro's Ear Falls plant to bring the total capacity of the development up to 18,460 kilowatts (25,000 hp) and mark "the fulfilment of a dream of twenty years ago."

From Dryden, Red Lake, Hudson and other points in the area, these Northern folk gathered to help Chester Jones, Super-

intendent of Construction, and William (Bill) Dowds, Hydro's Superintendent of the Patricia District, throw out the welcome mat for the arrival of the official party headed by Commission Chairman Robert H. Saunders, C.B.E., K.C., and the Premier.

There were others in the party. For instance, there was J. E. (Jack) Hammell, who is something of a tradition in the

by
The Editor

Red Lake area where he has been driving force in helping build the great gold mining industry in that district. But more about the visitors later, for the Premier's remarks at this noteworthy event should be featured at this point.

"This must be a particularly thrilling occasion for those who have been in this part of the country for many years because it is less than twenty years since the first work was done at this site," he said. "It is eighteen years ago since Hydro undertook another very important step in opening up this important area."

Mr. Drew recalled that it had been

(Continued on page 5)



TOP LEFT: This little lady appeared to be camera shy at first but J. G. White, M.L.A., Kenora, made effective overtures and she consented to pose for this picture with the new Ear Falls unit forming a background.

TOP RIGHT: A number of ladies were present at the opening ceremony and the Hydro News' photographer identified, among this group, Mrs. George A. Drew, Mrs. W. M. Benidickson, Mrs. J. G. White, and Mrs. William Dowds.

CENTRE LEFT: Tom Hartley, chef at the Ear Falls construction camp, had the able assistance of his wife in making the catering arrangements in connection with the official opening. Premier George A. Drew is shown extending warm congratulations and thanks to the young couple for a job well done.

CENTRE RIGHT: Mrs. George A. Drew received an unexpected and pleasant surprise when, following her introduction to Mr. and Mrs. Tom Hartley, she was presented with an angel cake.

BOTTOM LEFT: This photograph was obtained as the official party established a bridgehead at Ear Falls with J. E. (Jack) Hammell, noted mining man, setting the pace. Bringing up the rear are R. L. Hearn, A. W. Manby, William Dowds, W. Ross Strike, K.C., and Commission Chairman Robert H. Saunders, C.B.E., K.C.

EAR FALLS

(Continued from page 4)

less than a year ago when he had been privileged to open the new road "driven through the forest" linking Ear Falls with Dryden for the first time. "Now," he continued, "we see, step by step, this great development marching along with the development of the area itself. From this plant 25,000 horsepower (18,460 kilowatts) will be available not only for the mines of this area but also for Hudson, Sioux Lookout, Dryden and for development all around here."

At this point the Premier emphasized the all-important part played by Hydro in Northern Ontario and he mentioned that from the Red Lake area alone more than \$50,000,000 worth of gold has been mined in the past 16 years.

"We should bear our tribute," he declared, "to these men of vigour and vision who have developed the mines and to these men of vigour and vision who have produced the electricity that has made that mining development possible."

Continuing, Mr. Drew declared that the opening of the fourth unit at Ear Falls represented the fulfilment of a dream of 20 years ago. "We should think of this achievement as one part of a great programme of development now taking place throughout the whole of Ontario," he said.

Benefit Ontario, Manitoba

The speaker next made reference to the fact that to the north and west of Ear Falls there was 300,000 horsepower of energy which would be harnessed. He indicated the early development of Boundary Falls on the Winnipeg River in Manitoba, a little over 80 miles away. The power from that development, he stated, would benefit the people of Ontario and Manitoba alike and it would mean that Ontario would have an interchange of power on the west with Manitoba and on the east with Quebec. With the standardization of frequency Ontario would be in a position to sell and buy power from such states as New York, Michigan and possibly Minnesota and Wisconsin.

Proceeding, the Premier stated that the opening of a new plant in almost any place in Europe at present would be "a miracle almost beyond their dreams."

"And yet," he observed, "this is happening in place after place throughout Ontario. When you see what they are going through there (Europe) and you come back and see what we have here—the vast spaces that can be developed by vigorous, hard-working people, you know that Ontario and Canada are sit-

ting on top of the world; that this is the true land of opportunity where the people can look forward with confidence to the future."

At the close of his address, Premier Drew snapped on the switch that started the rotor of the new generating unit. At first, there was a whirring sound followed by a rhythmic hum and the fourth generator at Ear Falls had taken over its job along with the other three units of providing the power which is giving increasing impetus to the development of Ontario's North Country.

An Arresting Setting

It was an arresting setting for this historic ceremony. The interior of the plant was—at this point the following adjectives come to one's mind "immaculate," "shining" or "impeccable." Perhaps these are not the most appropriate adjectives to apply to a power plant but somehow they seem to convey the impression one formed at the opening ceremony and, for that matter, they are adjectives that could be used in describing the interiors of almost every Hydro plant at any time. The towering generators looked almost majestic in the glory of their new coats of paint while the walls, floor and other appointments presented an appearance that combined to enhance the impression of "immaculateness."

The actual ceremony took place on the balcony which leads to the offices and control room. Against an enormous backdrop of blue drape and two large Union Jacks stood the specially designed box which housed the switch that started the new unit. The front rail of the balcony was draped in white and in the centre was a shield bearing the Hydro coat of arms and motto "Dona Naturae Pro Populo Sunt." Flanking the shield were photographic enlargements showing the progress to date at the various Commission developments now under construction.

Included among the group accompanying the Premier and Chairman Robert H. Saunders on the balcony were J. E. (Jack) Hammell, W. Ross Strike, K.C., Second Vice-Chairman of the Commission; R. L. Hearns, General Manager and Chief Engineer; Dr. Otto Holden,

Assistant General Manager, Engineering; A. W. Manby, Assistant General Manager, Administration; William Dowds, Superintendent of the Patricia District; Chester Jones, Superintendent of the construction of the new unit; W. M. Benidickson, M.P., Kenora-Rainy River; J. G. White, M.L.A., Kenora; Garfield Anderson, Mayor of Fort William; C. W. Cox, Mayor of Port Arthur; J. R. Pattison, Chairman, Fort William Hydro-Electric Commission; F. G. Lovelady, Chairman, Public Utilities Commission, Port Arthur, and others.

Mrs. Drew, Mrs. Benidickson, Mrs. White and other visiting ladies were received by Mrs. Dowds.

Other Projects Planned

At the luncheon in the Hydro construction camp, Mr. Saunders told the capacity gathering that in addition to the development at Boundary Falls, other power projects were being planned at Kettle Falls, Oak Falls and Manitou Falls, all on the English River.

The Chairman also stated that it probably would not be necessary to introduce power restrictions in the Patricia District but that he was sorry he could not say the same about Southern Ontario. The need for restrictions did indicate, however, he said, that business was booming.

Illustrated pamphlets distributed by the Commission at the ceremony show that the first power from the Ear Falls plant had been delivered in 1930 when 3,730 kilowatts (5,000 hp) had been produced to supply the Howey gold mine and other properties in the Red Lake area. A second 3,730-kilowatt (5,000 hp) unit was installed and placed in service in 1936 to serve new mining properties. A third unit—5,500 kilowatts (7,500 hp)—was built and opened in 1939. The fourth unit, as already stated, now brings the total capacity of the Ear Falls plant up to 18,460 kilowatts (25,000 hp).

The pamphlet also directed attention to the important role played by the Rat Rapids development, 130 miles northeast of Ear Falls, in providing the power which has given impetus to the growth of the mining and other industries in the North. The Rat Rapids plant came into operation in 1935 to provide 1,044 kilowatts (1,400 hp) to serve the mines in the Pickle Lake area, including Central Patricia and Pickle Crow. In October, 1936, a second unit came into operation at Rat Rapids to provide an additional 1,305 kilowatts (1,750 hp) to meet the increasing mining load, and bring the total capacity of that plant up to 2,349 kilowatts (3,150 hp).

And so the opening of the fourth unit at Ear Falls marks the opening of another important chapter in the onward march of Northern Ontario where electricity is pacing the economic development of that great country.

OPERATING PROFIT

The Hamilton Hydro-Electric Commission has securities and cash in the bank amounting to over \$2,500,000, it was revealed when the report for the year 1947 was presented to members of the City Council by C. H. Watson, City Auditor. The report further stated that the Hamilton Commission showed a net operating profit of \$562,351, a decrease of \$34,209 from the previous year.

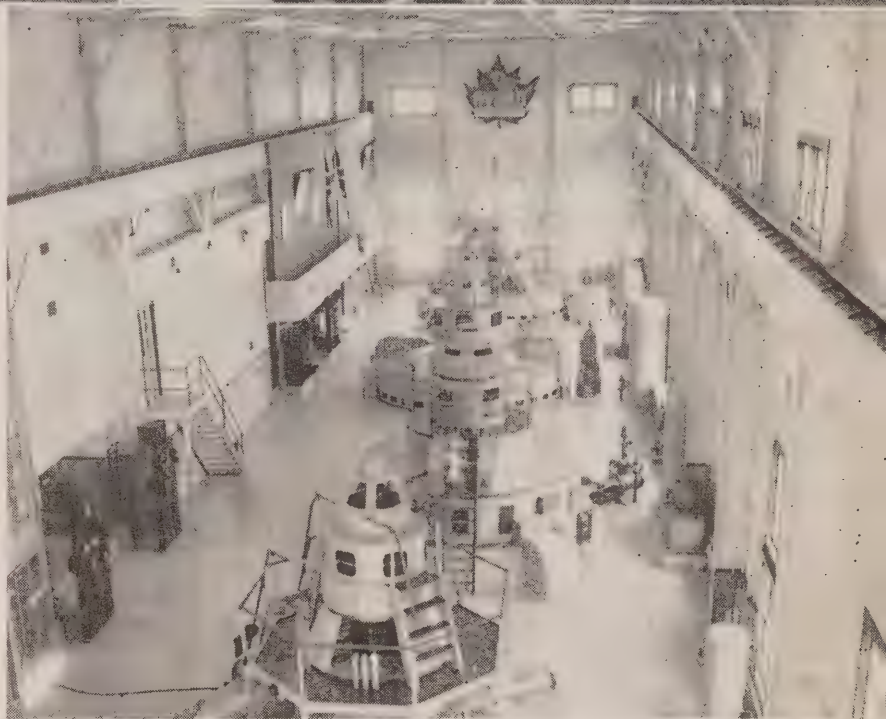


TOP LEFT: Appropriate drapes and decorations, photographic enlargements and the showmanship of Ray Phelps of the Commission staff transformed the balcony inside the Ear Falls plant into an arresting speakers' gallery for the official opening of the fourth unit.



TOP RIGHT: Just as the gathering of visitors and members of the Ear Falls colony assembled for the opening ceremonies, the Hydro News' photographer got this picture.

CENTRE: THIS is a photographic impression of the interior of the Ear Falls plant where all equipment, walls and floors have that well-polished and efficient appearance which is characteristic of Hydro plants.



BOTTOM LEFT: Among the many people with whom Premier George A. Drew talked at Ear Falls was Chester Jones, Superintendent of Construction, (centre). Commission Chairman Robert H. (Bob) Saunders, C.B.E., K.C., is shown introducing Mr. Jones to the Premier.

BOTTOM RIGHT: It wasn't the easiest place to get a good photograph but here is one impression of the luncheon setting at Ear Falls Construction Camp.





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Hydro's Chairman In Action

By Rail, Boat, Car, 'Plane And On Foot, Robert H. Saunders Has Travelled Thousands Of Miles Finding Out What Makes The Wheels Of Hydro Turn

ADD to the world's greatest travellers—one Robert H. (H. for Hydro) Saunders, Chairman of The Hydro-Electric Power Commission of Ontario.

Since taking over the very important task of directing the affairs of one of the Province's greatest organizations, "Hydro" Saunders has travelled thousands of miles by rail, boat, motor car, 'plane and shank's mare in finding out for himself what makes the wheels of Hydro turn. He has visited almost every generating plant, now functioning or in the process of construction, and gets a great deal of pleasure out of chatting with the lads whose brains and brawny backs are building and operating these plants. The men know him and like him for his solid, down-to-earth manner—he is their type of man.

The Hydro's Grumman Mallard 'plane, which has achieved prominence all on its own, is used by Mr. Saunders whenever the time factor is great, or when he is visiting plants in the wilderness where approach roads are practically impassable. As much as possible he uses his car, to leave the 'plane available for transporting the Commission's engineers to and from the projects, and for other Hydro business. Its latest job was in a rain-making role, dropping dry ice, from a height of 12,000 to 16,000 feet, on cloud formations to create sufficient rain to stop the holocaust resulting from the forest fires in Northern Ontario. The only reason why the Chairman didn't roll up his sleeves and pitch in to this operation was because his weight could be replaced by that much more dry ice on each trip.

Chairman Answers Calls

"Hydro" Saunders, believe it or not, has travelled over 19,000 miles in his car since he took over his present duties. No complaint reaching his ears is too large or too small to merit his attention. If he can possibly do so he gets out to see the situation for himself. Many farmers and residents of rural areas have been agreeably surprised to find, in answer to their queries or complaints, the Chief Executive knocking at their door, and

saying "How do you do? My name is Saunders, from the Hydro." Once each week he takes trips to municipalities, to visit local Commissions, municipal officials and Hydro representatives.

Recently he was scheduled to be guest speaker at the annual conference of the Association of Ontario Mayors and Reeves in Windsor. Learning of some difficulties being experienced by Hydro consumers in Goderich and Iverhuron, just prior to his departure for Windsor, Mr. Saunders gave up a seat on the T.C.A. flight, and drove some 380 miles, on a round-about route, to visit the cause of the trouble and rectify it. While in Windsor, several of the Mayors and Reeves took advantage of his presence, at his request, to lay before him some matter of interest concerning their own particular Hydro organization. He cleared them all up, even undertaking to drive back to Toronto by way of St. Thomas, to see some land the Hydro Commission of that municipality wished to buy.

On many of his trips out of town he meets Hydro workmen, busy on their task of erecting and maintaining the many miles of rural lines and transmission lines throughout the Province. Invariably he makes it a point to stop, introduce himself, and "talk shop." On the longer trips he often feels that his driver needs a rest from driving, and takes over the wheel himself.

One typical example of the Hydro Chairman "in action" was recorded on the night of June 15. At 10.20 that night he called in his executive assistant and dictated a speech he had to deliver at Goderich at 1.30 the next day. Before proceeding to Goderich, however, he kept an appointment at 8.30 in the morning of the 16th at Mimico.

And so it goes. There are never enough hours in the day for "Bob" Saunders. Many of his evenings are spent visiting places he cannot reach during the day. His available time on Sundays and holidays is similarly spent. Fortunately the members of his family enjoy a good drive in the country. They are resigned to the fact that the occasional trips on which they accompany him are the only chance they have of family recreation.

"We are here to serve the public of the Province of Ontario," says Chairman

Saunders, "and I intend to see that they get the service to which they are entitled."

He won't spare himself, and he is setting the example for the rest of the Hydro staff in no uncertain terms.

"Hydro" Saunders has boundless energy—enough for ten men. Those of his staff who try to keep up with this human dynamo have a sneaking suspicion that he IS ten men!

Despite the fact that the Commission's employees enjoy a five-day week, with Saturdays off, the Office of the Chairman has been open every Saturday morning since the Hydro Chief took office. This does not mean, however, that the members of his staff are compelled to work an extra half-day—on the contrary, they enjoy the same privileges as all other employees in the building. The work is done on Saturdays by Mr. Saunders himself, and by his Executive Assistant. Together they carry on all the routine duties of the office, preparing, typing and mailing letters and reports, answering the telephone, interviewing callers, etc. It is quite a revelation to see the Big Boss licking envelopes and stamps, and carrying the mail from the Office on Saturdays to deposit in the nearest mailbox. The juniors on the staff of the Commission can take some satisfaction out of the fact that on occasion the Chairman's duties are not very much different from their own!

Mr. Saunders' desire to promote a friendlier feeling between the Commission and those whom it serves is certainly being fulfilled. Through the medium of correspondence and radio addresses his friendly personality and his sincerity in his beliefs is being transmitted to municipalities and individual consumers throughout the Province. This has resulted in a great increase in the work of his office, necessitating a staff of five (excluding himself) to handle the evergrowing volume of correspondence and routine work which he attracts.

Time and again ordinary human beings shake their heads in wonderment and say "How can he keep up that pace?" Being an ordinary human being, the writer can only echo in a weary voice "Yes. How can he?"



HYDRO'S SUBSTATION at Woodstock. Power comes in over a high-voltage steel tower line and is stepped down for distribution to rural areas over the wooden pole lines shown in the foreground. **INSET**—J. Riddell, Line Foreman at the Brant station, is insulating with special rubber hose a 4,000-volt rural line in order that a repair crew may work safely on the 26,400-volt line above from which the power has been cut off. Rubber equipment, carefully inspected by Hydro, affords protection up to 6,000 volts.

Hydro Extends Its Lines

by
Harry M. Blake
Hydro News

HYDRO has been moving its markers for rural electrification. It has been moving them UP!

Last year 20,691 new consumers were added to the Commission's rural lines—an all-time record. Approval has been given for the addition this year of 29,614 new applicants. Of this prospective total, 12,648 had been connected on June 18. At that date the number of rural consumers receiving Hydro services was already 206,701, or 1,164 in excess of the 204,537 estimated for the original Five Year Plan at the date of its completion in 1950.

The Plan tentatively provided for the building of 4,818 miles of new line during the first three years. Owing to shortages in material supplies, particularly in conductors and line hardware, only 2,720 miles had been constructed up to the end of 1947 as against a proposed 3,286 miles; and this included some mileage built to meet vital and pressing requirements after the end of 1944 but while war-time restrictions were still in force and before the Five Year Plan was in actual operation. Approval has, however, been given for the construction this

year of 3,533 miles of new rural line. If this goal is reached, a total of 6,352 miles will have been built by the end of 1948, exceeding the total originally estimated for that date—including the emergency building during the last year of the war—by 534 miles.

Hydro Lengthens Stride

Up to June 18 of this year 1,539 miles of the approved 1948 total had been constructed and 12,648 new consumers were being given Hydro services. During the entire previous year only 1,008 miles of rural line were built, and the notable progress made in the last few months is attributed to greatly improved conditions in material supply. So favourable is the situation in this respect at the present time, that the Commission's engineers

Approval Already Given For Construction Of 3,533 Miles Of New Line This Year — More Rural Consumers Now Added Than Originally Planned For 1950 — Power Demands Sweep Aside All Records

are reported to be confident that even if the ambitious objective for 1948 were not quite reached, it would be closely approximated.

The mileage constructed since the beginning of the Commission's fiscal year on November 1 last is, it will be noted, less than half of the total proposed for completion by the end of October. It was pointed out, however, that during the summer and early autumn months ground and weather conditions are such as to promise a greatly accelerated tempo in line construction. Never since the war has there been such an ample supply of conductors and insulating material. There is only one serious bottleneck now remaining. That is steel. This metal is, of course, essential for transformer equipment, for steel-reinforced aluminum cables and some other types of line hardware.

Overcoming Steel Handicap

Realizing the importance of steel, Hydro News ventured to ask whether the scarcity of this material would not hold up the programme of line construction during the balance of the year. This, in effect, was the answer:—

"Hydro never marks time. When it
(Continued on page 11)



UPPER LEFT—Staking out a rural power line. UPPER RIGHT—Hydro's mechanical digger speeds up construction. Holes are excavated in from five to fifteen minutes. LOWER LEFT—Placing a pole with truck-derrick. This mechanical equipment saves time and labour. LOWER RIGHT—Hand-pikes are used to raise poles when trucks are not available.



EXTENDS ITS LINES

(Continued from page 9)

is confronted with a problem or obstacle that cannot be immediately surmounted, it turns at once to other activities, as nearly related as possible, to relieve the situation. What will be done is this. If we find we have insufficient steel for transformers, etc., we will throw our whole energy into the erection of poles and the stringing of conductors. We have plenty of material now for this purpose and the man power is available to carry out the jobs. Then all that will have to be done is to put in the transformers as the steel comes through."

It was explained that the total of 3,533 miles approved for 1948 is, within certain limits, a flexible figure. The actual new mileage estimate at the end of last October was 3,429 miles. Since then it has been stepped up a little with a view to meeting special cases, including those of war veteran applicants. These are dealt with every month and will continue to be considered right through to the end of the fiscal year and on again in 1949.

Action Everywhere

Based on the original figure of 3,429 miles, construction during 1948 will be divided as follows—Niagara Division, 824 miles; Georgian Bay Division, 886 miles; Eastern Ontario Division, 900 miles; Thunder Bay System, 50 miles; Northern Ontario Properties, 160 miles. Total, 2,820 miles. The remaining 609 miles of the original 1948 programme represents a carry-over from 1947.

The increased demand for electricity in rural areas, it was pointed out, goes far beyond the scope of the Five Year Plan. Apart from the very special cases to which reference has been made, proposed 1948 construction is based on applications received to June 30, 1946. Since that date applications by the thousands have been piling up and it will naturally be some time before these can receive attention. If progress in construction can be maintained, however, at the present pace, the gap between actual services and the demand should be steadily narrowed.

While an unprecedented number of consumers have been added since the war to existing rural lines and while new records, in this respect, will probably be established this year, it was emphasized that there is a limit to this arrangement. It was gathered that what the Commission was endeavouring to accomplish at the present time was a speeding-up of line construction to overtake and pass the estimates made for the Five Year Plan so that the fullest advantage could be derived in rural areas from the new power developments now under way. These provide for an addition of 750,000

(Continued on page 14)



TOP—Stringing a rural power line. The conductors are being pulled out by a truck ahead.



CENTRE—Connecting up a consumer service. The transformer steps down the primary voltage to 110 and 220 volts.



EXPLAINING TO a new farm consumer the purpose and operation of the automatic service entrance switch.

VITAL POWER LINK

by
Boyd L. Graham
Hydro News



THIS PHOTOGRAPH depicts construction activity at its height as Hydro hastens completion of Westminster Frequency Changer and Transformer Station near London.

Time: The summer of 1948.

Place: Westminster—a small station on the London and Port Stanley Railway line.

Here, in the heart of a rich farming section—two miles south of the flourishing city of London—Hydro is pressing to completion another of its important postwar projects, which is identified by the rather impressive name of Westminster Frequency Changer and Transformer Station.

Strategically located, Westminster is primarily designed to form a tie between the 25-cycle power, generated at Niagara River plants, and the new 60-cycle power which will become available when other Hydro plants—now under con-

struction along the Ottawa River—are placed in operation. Westminster will be linked to the Niagara and Ottawa generating stations by a series of new high voltage transmission lines. These new power lines are being built to answer the demand for more power, and to relieve the load on existing lines supplying the St. Thomas and London districts as well as other sections of Western Ontario.

In addition, the Commission has completed negotiations for the purchase of approximately 19,500 kilowatts (26,200 hp) from Polymer Corporation at Sarnia which has its own steam power plant. When the necessary facilities have been completed by Hydro this fall, Polymer's

60-cycle power will be fed into the Hydro system over a new \$800,000, 115,000 k.v. line which will be linked with Westminster Station.

Three Units

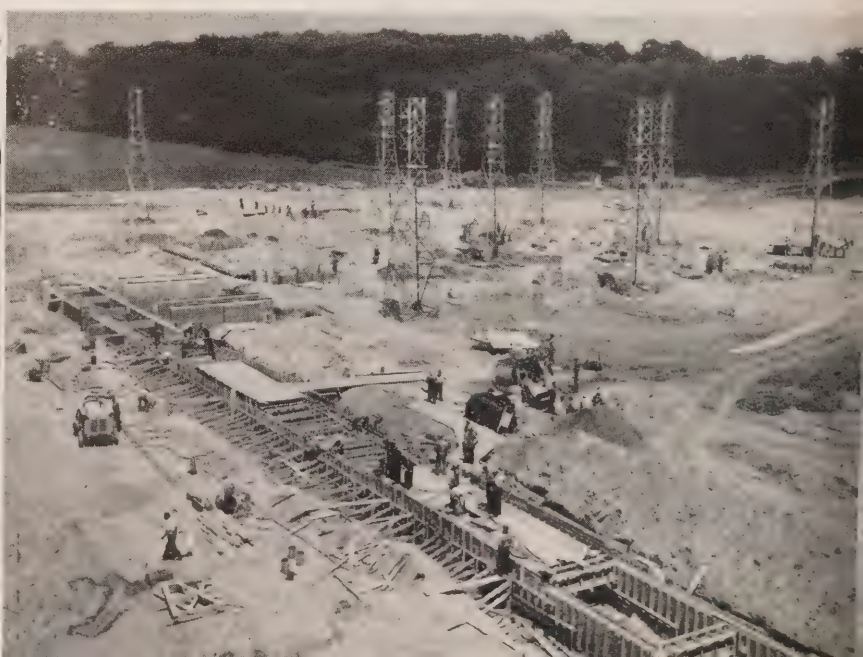
Perhaps the most interesting feature of Westminster will be its facilities for converting power from 60 to 25 cycles—or from 25 to 60 cycles as day-to-day power demands dictate.

That is precisely what will happen when Polymer's steam-generated power becomes available this fall. A portion of this power will be distributed on a 60-cycle frequency in the Sarnia area while the bulk of the remainder will

(Continued on page 30)

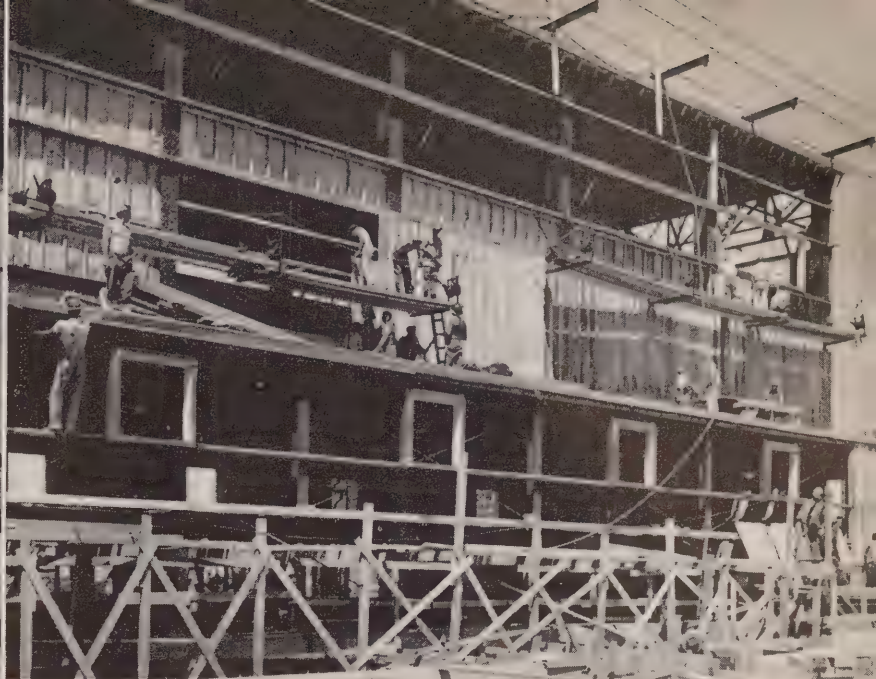
LOWER LEFT—Interior view of the frequency changer building shows workmen preparing for installation of frequency changer equipment. LOWER RIGHT—View from the roof of the frequency

changer building shows construction of the cableway and the transformer track in progress while work on the 25-cycle "switching area," in the background, is also underway.





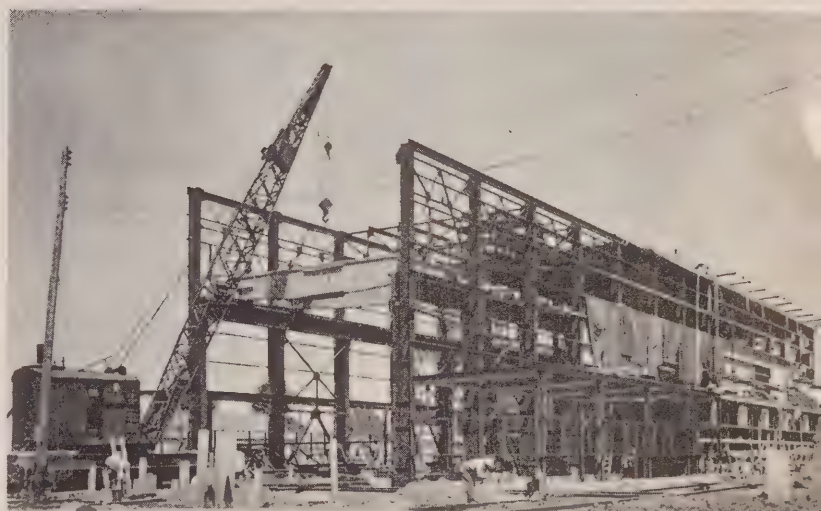
BRONZED WORKMEN, above, are fitting large sheets of tile over the steel framework of the frequency changer building to complete the exterior walls of the structure.



FREQUENCY CHANGER building takes definite form as construction crew speeds work on the exterior walls of the structure, above.

CENTRE, RIGHT—OVERHEAD CRANE for moving heavy pieces of equipment is shown during installation in the frequency changer building.

WORKING CREW, below, is shown placing forms before commencement of concreting operations in connection with construction of the cableway and the transformer transfer track.



HUSKY CONSTRUCTION workers, shown below, placing earth around a concrete base for some of the oil circuit breakers in the 25-cycle "switching area"



EXTENDS ITS LINES

(Continued from page 11)

kilowatts (1,000,000 hp) to the power pool of Ontario without considering the mammoth development which it is proposed to undertake in conjunction with the New York State Power Authority at the Long Sault Rapids on the St. Lawrence River.

Difficult Problem Faced

Owing to deficiencies in material supply coupled with the tremendous increase in power demand from both farm and hamlet consumers, the Commission is frank to admit that the rural problem has been one of the hardest it has had to meet since the end of the war. The requirements of an increasing population in Ontario as well as the obligations entered upon by this country to supply foodstuffs to Europe made it necessary at times for Hydro to concentrate its every effort on maintaining adequate power supplies to farms suitably equipped to use electricity as a material aid to production.

It is now said to be possible to contemplate a greater measure of assistance to rural consumers in nearly all categories. As, however, a great many miles of line have to be constructed to catch up with the demand for electricity, it is understood that preference will be given to all-year-round consumers and that no new primary line will be built to summer cottages until the more vital demands of farm and hamlet have been looked after. Apart from this provision, it was explained, new applications for electrical services would be dealt with in the order of their receipt.

Consumption Away Up

Hydro power, it was pointed out, is one of the very few commodities for which no increase in price has been recorded since the war. The service charge to farms was abolished some time ago and in the case of hamlet services it is only 56 cents gross per month. The rural rates now consist essentially of a three-step consumption charge which is uniform throughout the province. The first block of electricity used is charged for at the rate of 3.5 cents gross per kilowatt hour; the second block at 1.6 cents gross per kilowatt hour, and the third block at .75 cents gross per kilowatt hour.

These low rates have enabled a great many rural consumers to broaden their uses of electricity on the farm. This expanding use of Hydro power has now reached a point where hundreds of individual farms might reasonably be compared to small factories. Today, many of the operations, in and around a barn, have been mechanized and streamlined, thus eliminating the necessity of considerable hand labour. In addition, there is

little difference in the way Hydro is employed in the farmhouse and the modern city home. This process of mechanization has facilitated and speeded up many farm tasks with a resultant general increase in farm production.

Looking Ahead

As far as power supply permits, it is fully anticipated that this trend will continue for several years. Hydro, despite the difficulties that still have to be overcome, plans to continue constructing new lines and improving existing services in

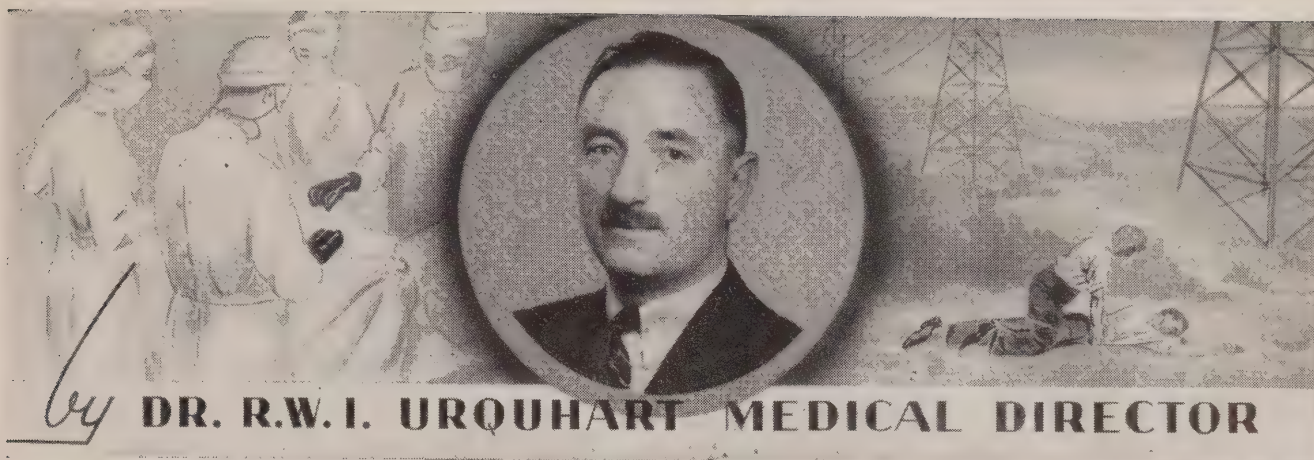
'Twas a Nice Catch!



RECOGNIZE THESE two ardent anglers? They're J. E. Teckoe, Jr. (left), Manager of the Galt Public Utilities Commission, and President of the A.M.E.U., and J. Clark Keith, General Manager, Windsor Utilities Commission (Hydro Division) and Vice-President of the A.M.E.U. With half an hour to spare before departure time from Ear Falls where they attended the official opening of the fourth unit, Messrs. Teckoe and Keith looked longingly at the sparkling water beside the plant. An understanding member of the Hydro colony handed them a couple of fishing rods and they didn't take long to find an ideal spot where Anne Herrick of Clinton, Ill., happened to be fishing. Judging by the picture the boys had good lines!

order to extend rural electrification. It will be necessary to leave the estimate of progress envisaged in the Five Year Plan far behind to meet the demands for power now crowding in upon the Commission. And some of those so-called "inaccessible" places that were going to be temporarily by-passed under the original Plan are now projected fields of Hydro rural electrification. One of these is the Rainy River District. While the Commission does not supply power to

(Continued on page 30)



NATIONAL IMMUNIZATION WEEK

Of recent years there has been a rash of weeks dedicated to one cause or another. They all follow the pattern of the "Old Home Week" and every effort is made to advertise and popularize the particular object of that week.

The Health League of Canada, in co-operation with Dominion, Provincial and Municipal Health Departments throughout Canada, have set aside the week of September 12 as National Immunization Week. The purpose of this week is to call to the attention of the public the very real need for protecting children against diphtheria, smallpox and whooping cough by immunization.

These diseases are contagious and attack all ages, but babies and children are the most susceptible. They are largely preventable by adequate immunization.

The story of the conquest of these diseases by doctors and scientists is very dramatic and has been referred to in a previous article. Smallpox, for instance, is now a rare disease, having been practically wiped out by vaccination. The danger lies in the omission of vaccination by large numbers of people because of the apparent absence of the disease. These people render themselves liable to infection should a case develop in the community. It would be very easy under these circumstances for the disease to reach epidemic proportions. It is highly important therefore that the public be reminded from time to time of the necessity of this simple precaution.

Diphtheria Toxoid

Diphtheria Toxoid has similarly done much to reduce the diphtheria menace. In 1943 there were almost 3,000 cases

FIRST-AID TRAINING

The St. John Ambulance Association will shortly undertake one of the most ambitious training programmes in the history of the Canadian commandery. Arrangements are now under way to institute first-aid courses on a Dominion-wide scale for employees of the federal public service. Undertaken jointly by the Order of St. John, the Civil Service Commission and the Department of National Health and Welfare, the programme will train selected civil servants in first-aid principles and practices. It is the immediate aim of the programme to enrol for training employees strategically located in every government establishment throughout Canada.

The Civil Service Commission is making arrangements through its staff training division for the selection of trainees and the scheduling of courses. The St. John Ambulance Association has volunteered the services of instructors, equipment and manuals at every point where courses are required. Already there is a nucleus of persons within the public service holding St. John Ambulance certificates, some of whom are qualified as instructors. Full advantage will be taken of the services of certificate holders and, wherever possible, instruction will be carried on by qualified civil servants.

of diphtheria in Canada with almost 300 deaths. In 1947 there were just over 1,500 cases with less than 150 deaths. In other words both the number of cases and the deaths have been reduced by about one half during those years. A great part of this reduction has been due to the use of Diphtheria Toxoid. Still wider toxoiding of children would undoubtedly lower the figures still further.

er. During Immunization Week the Health Departments across the country will stress this health saving measure.

Whooping cough used to be one of the diseases that everyone caught sooner or later; it was like death and taxes—inevitable. Now it can be prevented by whooping cough vaccine. This is fortunate, for whooping cough killed more young children in Canada last year than all the other so-called children's diseases combined. In the period referred to above, the cases of whooping cough have decreased from about 19,000 to 10,000, and the deaths from 400 to a little over 200. Again wider use of the whooping cough vaccine in young children would undoubtedly lower these figures. A child now does not need to have whooping cough, provided the parents see to it that vaccine is administered.

Disease Will Be Conquered

A definite preventative for polio has not yet been found, although the search has enlisted the brains and resources of the best research workers in the country. However, the time will come when this dread disease will also be conquered. While there is no known preventative for polio, there are fewer deaths per year from it than from either diphtheria or whooping cough. These CAN be prevented.

This means that the public have not been co-operating to the fullest extent with the medical authorities in their efforts to prevent these diseases. Otherwise these contagions would practically disappear—for example, smallpox. National Immunization Week has been chosen as a means of laying these facts before the public. Immunization from smallpox, diphtheria and whooping cough is worth while. Do not neglect to have it done.



PUTTING THE protective glaze on a big porcelain insulator bushing which will soon be installed at one of Hydro's new transformer stations.

In order that electric currents may be confined to their destined paths, the use of supporting structures of a non-conducting nature is essential. These are known as insulators. Fashioned to the required shape and size, they are employed on power transmission and distribution lines, at transformer stations, on wiring circuits in factory, office and home, and wherever electrical equipment is set up.

Recently, Hydro News had the interesting experience of forming first-hand impressions in a plant where these all-important pieces of equipment are manufactured. The invitation to visit such a plant came from the Canadian Porcelain Company Limited at Hamilton, one of Canada's leading manufacturers of insulating equipment and one of Hydro's suppliers.

The location of this company, in the south-west suburbs of the city, suggests not so much a factory as a retreat selected by a guild of craftsmen. Withdrawn from the heavily industrialized area, the spacious premises are almost entirely hidden by a pleasant environment of countryside. There are, of course, railway sidings and all the other facilities for the receipt and shipment of material; but, as we approached by road, the only markers to suggest from any distance the presence of a busy industry were the squat beehive stacks of the firing kilns

which rose to a modest height against the sky. The factory is fronted and flanked by a golf course, and an unsophisticated Alice in Wonderland might imagine that it was in some way associated with players looking for lost balls.

Wet Process Porcelain

As we were soon to discover the porcelain insulator industry provides an analogy for this fantasy. Just as the golfer who has lost his ball in the rough hopes, in his searching, to find another of superior quality and performance to his own, so, not so long ago, power companies were beating about the bush looking for a material which would have all the high insulating properties of rubber, mica, asbestos and glass with greater thermal stability and other characteristics better suited to withstand the stresses of above-ground electrical transmission.

At that time W. T. Goddard, President of the Canadian Porcelain Company Limited, was an assistant professor of electrical engineering at the Worcester Massachusetts

by
Harry M. Blake
Hydro News

Porcelain

Polytechnique Institute. His academic work brought contacts with Frederick M. Locke, who is credited with being one of the original designers and producers of wet porcelain insulators in America. The two men became associated in the development of the infant industry and in 1912 Mr. Goddard established at Hamilton the first Canadian wet process factory. This plant, with its business increased eightfold, is, we were told, not only serving much of the domestic market but also shipping insulators to all parts of the world.

Wet process porcelain, as was explained to us by C. M. Morden, General Manager of the company, is a homogeneous mixture of ball clay, china clay, feldspar and flint. It is impervious to moisture, resists the action of corrosive agents and possesses the mechanical strength to withstand thermal stress arising from rapid temperature variations and to bear the load of heavy cables. The clays come from England where they are mined in open pits. Cargoes assigned to North America are shipped to forwarding agents at Philadelphia whence tonnages for Hamilton are rerouted by rail. The feldspar is obtained from both Ontario and Quebec. The flint is also a Canadian product.

Making Filter Cakes

On arrival at the factory all these materials are first treated to rid them of impurities. They are then mixed with water in large ball mills. There a mixing-grinding operation takes place which converts the whole content into a uniform thick, creamy "slip" of a minimum fineness of 200 mesh. This slip is introduced into filter presses where excess moisture is removed by hydraulic pressure. The resultant "filter cake" is fashioned into round slabs or "leaves" about 1¼ inches thick. These form the basic material from which porcelain insulators are made.

Before they are further processed, the filter cakes must be aged; and they must be aged without drying. For this purpose a cellar is provided where the humidity is maintained at the saturation point.

When sufficiently matured, the filter cakes are fed into a pug mill where an arrangement of vertical blades cuts the clay and forces it downward into a horizontal worm which extrudes it at high pressure, through a nozzle, in cylindrical form. The slug, as it comes out of the machine, is cut into convenient lengths for the fashioning of the insulator for which it is designed.

Insulator Types

Insulators used on the Hydro system are divided into three main classes—the pin

Policemen

type, the suspension type, and bushings.

The pin type insulator is used on comparatively low voltage lines. It is so called because the insulator shell is fitted to a wooden or metal pin secured to the cross-arm of the tower or pole. The pin is tapered for strength and the top has an Allen lead threading. Set in the throat of the insulator shell is a zinc cap, with a corresponding worm, which is screwed down on the pin. Over this hardware, which it surrounds like a jacket, the porcelain provides a thick and solid defence against leakage and flash-over. At the top of the insulating shield is a groove which supports the conductor. Pin type insulators are usually made in one unit or in two or three units cemented together.

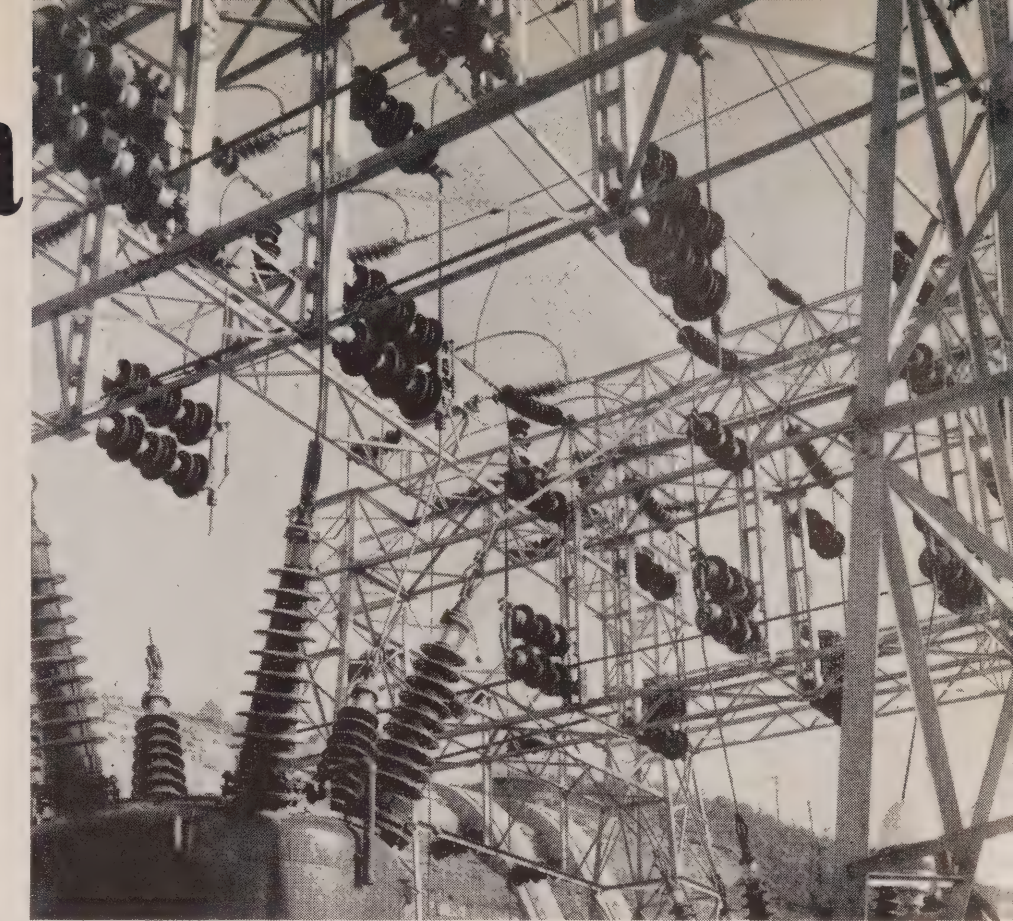
Suspension insulators are used to support the heavier cables of high voltage lines. They are composed of a number of units—as many as 18 or 20 are required for the 220,000 volt lines—linked together by a ball-and-socket arrangement of heavily galvanized caps and pins. Adequate insulation is provided by the porcelain cover. The caps on the discs at the end of the string are furnished with the requisite fittings to tie in with the conductors they support.

Bushings are employed almost everywhere where power has to be led to electrical machinery. In their largest sizes, they are a prominent feature of Hydro transformer stations. Porcelain bushings are made up of a number of insulator discs fused together and tapered from the base. Down the centre runs a hole or tunnel through which the power cable or conductor passes. When very high voltage conductors have to be dealt with in this manner, oil is chambered within the porcelain shell to provide additional insulator resistance.

All these different kinds of insulators and many other varieties for factory and domestic circuits are made at the plant of the Canadian Porcelain Company Limited from the rather insignificant-looking slugs of wet clay extruded by the pug mill.

Shaping Processes

Accompanied by Fred Taylor, the Production Manager, we passed on to a group of skilled workers who might easily have been taken by "Alice Through the Looking-Glass" for bakers engaged in kneading Wonderland dough. Actually they were rolling and pounding the clay from the pug mill to eliminate the possible presence of folds or laminations. These vigorous operations were followed by the shaping by hand and knife of the



INSULATING EQUIPMENT at the switching station of a Hydro power plant. Bushings and post and suspension type insulators are all in evidence.

exterior surface of a suspension insulator unit which, we were led to understand, would soon be supporting conductors on one of Hydro's new power transmission lines. Afterwards the batch of insulator parts which these men were preparing would be packed in plaster of paris moulds and placed in a drier until bone dry. The moulds had been carefully cleaned and brought to the proper moisture content before filling. In this connection, Mr. Taylor pointed out that while the plaster assisted in drying the clay, if the moulds were overly dry there would be a too rapid absorption which might affect the mechanical strength and other desirable physical characteristics of the insulator.

The interiors of suspension insulators and the smaller pin-type shells are shaped in a hot press. The mould is placed in the press and a hot metal die descends with a whirling motion, subjecting the clay to a high pressure and causing it to assume the required shape. On the reverse of the insulator shield circular ridges take form which materially enlarge the defensive area against flash-over. These plunger operations have to be carefully controlled so as to obtain an evenly pressed piece in which the clay is ridged and shallowed in

uniform density without the creation of folds.

The larger pin type insulators are shaped on a jigger which somewhat resembles a potter's wheel. A first class job, we were told, can only be achieved by hand pressing, and as the greatest care and accuracy is required, only highly-skilled and experienced operators can be employed on the task.

Protection For Workers

We walked over to where a man was working at a clay lathe. He was shaping a small bushing unit from a dry clay slug. Protecting the operator was a canopied blower device which sucked up all the dust and small particles and discharged them outside the plant. Because of the high degree of protection afforded by such installations and through periodic medical examinations of employees, occurrences of silicosis at the plant are extremely rare, Mr. Morden explained.

Returning to the insulator parts which have been shaped in the moulds . . . when these are sufficiently dry they are removed from the moulds and placed on rotating forms where the rough edges and the superfluous clay are removed.

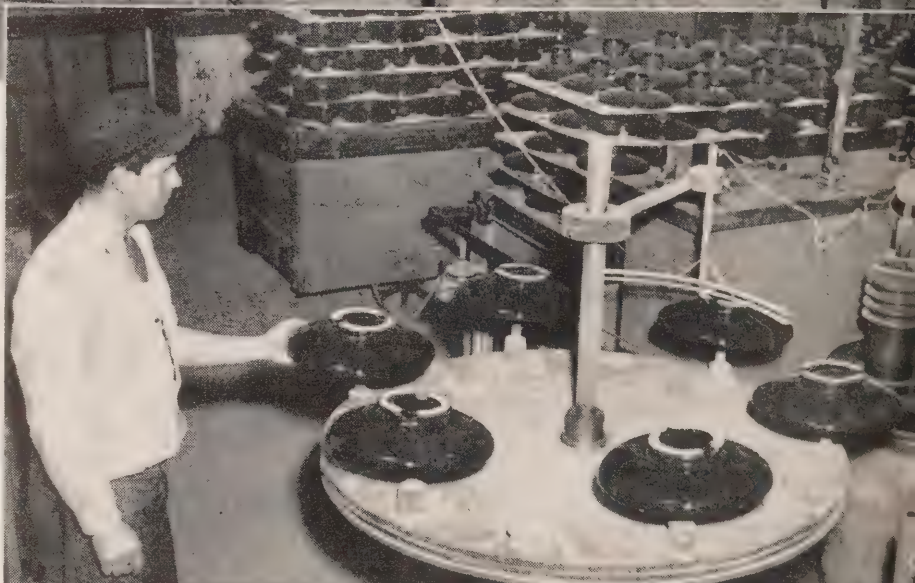
(Continued on page 28)



TOP LEFT—Removing insulator parts from a firing kiln. Firing converts the ingredients of the clays into a hard, white porcelain, with great tensile and dielectric strength.



TOP RIGHT—Large pin-type insulator shells are made on a jigger resembling a potter's wheel.



AT CENTRE—After firing, the parts of porcelain insulator shells are electrically tested under stress.



ALL ABOARD for Dublin town. And, begorra, at the left, if it isn't that "broth of a bhoys," Bert McCrory, checking over the shipment with Frank Taylor, production manager of the Canadian Porcelain Company Limited.



UPPER LEFT—A typical ball clay "mine". England is the chief source of the clays used in porcelain insulator manufacture.

UPPER RIGHT—Clay "filter cake" is fed into a pug mill and extruded in the form of a cylindrical slug. It is cut into convenient lengths for the fashioning of the insulator parts.



AT CENTRE—The reverse sides of suspension insulator discs are shaped in a hot press.



IF THE group of craftsmen shown below were working in a costume studio at Hollywood, one might well imagine that they were giving the finishing touches to a Mongolian type of headwear for a production of "The Golden Horde." As a matter of fact, they are glazing the discs of suspension insulators to insure them against cracking under sudden changes of temperature.

NIAGARA



by
John A. Murphy
Hydro News

"THE CRADLE of Ontario" might well be another name for the beautiful community of Niagara-on-the-Lake which became affiliated with Hydro in 1920 when the Niagara Hydro-Electric Commission was formed.

At present it handles a load of 936 kilowatts, (1,255 hp.) and services 18 miles of transmission lines and one sub-station. Consumption of power is divided among 696 domestic, 102 commercial and 14 industrial consumers. The local commission's staff is small but well-trained and competent. It is under the management of J. F. Walsh, a native of Niagara and a veteran of twenty-five years' experience in Hydro, nineteen as a

lineman. Remainder of the staff consists of Betty Haines, Treasurer, and Alex Russell and Bill McGinnis, lineman and assistant, respectively. This crack two-man line crew makes its rounds in a modern, fully-equipped repair and maintenance truck.

Reputed to be the oldest town in Ontario, Niagara in 1782 had a population of sixteen families, according to the first official census. Since then this picturesque meeting place of the turbulent Niagara River and serene Lake Ontario has borne many names. It has been known as Ouinagara, Butlersburg, Nassau, Lennox, West Niagara, Newark, Niagara and now, Niagara-on-the-Lake. Each name, like the era to which it belongs, has contributed a generous share to the wealth of historic tradition associated with the Niagara Peninsula.

FIRST capital of Upper Canada and the oldest town in the province, historic Niagara lives proudly among its memories and traditions. From the ramparts of old Fort George long-silent cannon look out over grassy slopes once trodden by Brock and Tecumseh.

Upper Canada's First Capital

After its initial stages as a rural settlement, Niagara became the first capital of Upper Canada under Governor John Graves Simcoe in 1792. For several years, until the War of 1812, it proudly bore its mantle as the military and political focal point of the province. Put to the torch and destroyed by a retreating American army in 1813, the town flourished anew as a commercial centre in the years following the war. Many of the vessels plying the Great Lakes were built in the busy shipyards along the river's edge. In addition, the law business for the counties of Lincoln, Welland, and Haldimand was carried on there, so that during the lengthy assizes the hotels and inns were thronged with the members of the profession as well as their clients and witnesses.

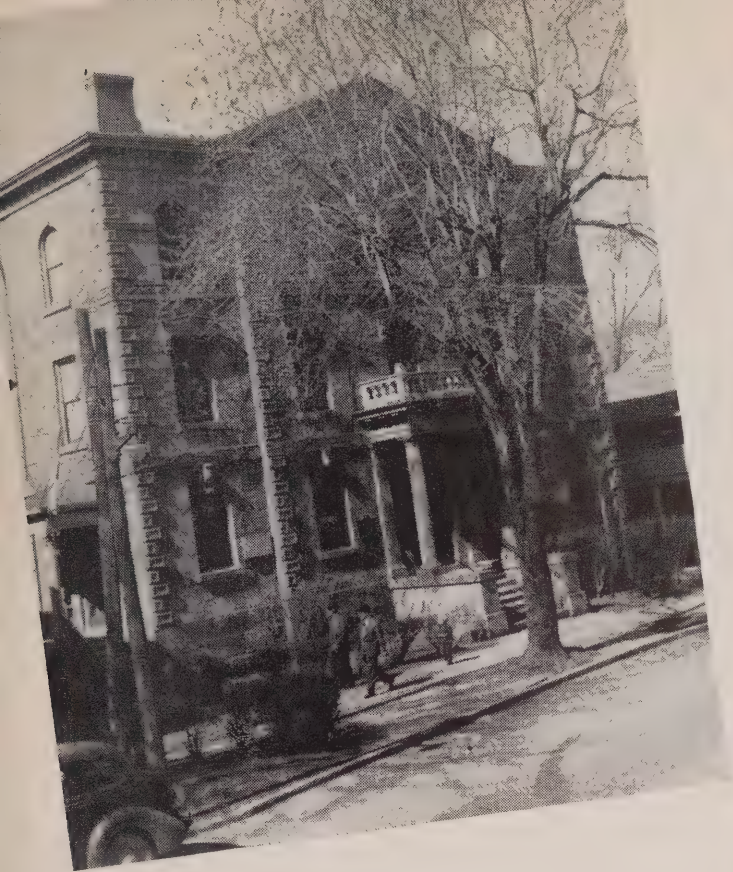
There followed what we would probably call "a depression." The county seat was moved, the shipyards closed, the soldiers were ordered elsewhere and commerce generally, lagged. To add to the town's tribulations, several fires razed important buildings causing business to suffer further setbacks. Niagara seemed destined to be another "Deserted Village." An article in a contemporary newspaper referred to it as "Lotus Town."

But such gloomy prophecies were premature and doomed to remain unfulfilled. The sheer natural beauty of the locale attracted visitors from everywhere. The town itself, with its peaceful avenues, gentle breezes and whispering shade trees was a haven for those weary of the summer heat and clamour of the modern city. Many Americans from neighbouring New York State found the surroundings so much to their taste that they built summer homes there and have come to be considered honorary citizens of the town.

Only Star-Shaped Fört

For the casual visitor, or tourist as he has come to be called, the area abounds with places of historical significance. Fort George, built in 1794, and the residence of Sir Isaac Brock from 1804 until his death at Queenston Heights eight years later, has been restored according to the original plans. Also of interest is Fort Mississauga built in 1814 from the ruins

(Continued on page 22)



BUILT IN 1847, the Town Hall still houses the municipal offices and the public library which is reputed to be the oldest public library in the province.

•

NIAGARA HAS long been favoured as a summer haven by weary city dwellers, many of whom have built palatial homes there. Here is one stately example of the beautiful dwellings lining the river's edge.

•

ROUGH SPOTS are being smoothed from the hulls of these sleek runabouts in the boat-building plant as workmen keep production humming for the forthcoming summer. Some of the boats shown here may be skimming over lakes as far distant as South America before many more months roll around.



OLDEST DRUG store in Ontario and probably in Canada is the proud tradition of Field's Drug Store which was established in 1820. It has been in its present location since 1866.



WITH TWO such stalwart young men as Bill McGinnis and Alex Russell on either side Betty Haines is in a position any girl might envy. Betty is Treasurer of the Niagara Hydro-Electric Commission, while Alex performs his duties as linesman with the capable assistance of Mr. McGinnis.



NIAGARA

(Continued from page 20)

of the town which was burned the previous year. It has the distinction of being the only star-shaped fort ever built in Canada. The First Parliament was held at Navy Hall in 1792 and this building also served as the residence of Governor Simcoe. It, too, has been restored and is now a military museum.

All Niagara's landmarks and points of interest are not reminiscent of past battles and military grandeur however. Several of the oldest churches in Ontario still stand in their church yards keeping watch over their parishioners of a century ago. St. Andrew's Presbyterian Church is regarded as one of the outstanding examples of Colonial architecture today. First built in 1791, but burned during the War of 1812, the present structure was rebuilt in 1831 and restored in 1937. St. Mark's Anglican Church was partially built from 1804 to 1808. Used as a hospital and barracks during the war it was restored in 1826 and the chancel completed in 1834. Grace United Church dates back to 1854, and St. Vincent de Paul Roman Catholic Church was erected in 1834 and has records dating back to 1827.

The Royal Niagara Golf Club, located in the angle of land where the river flows into the lake, is one of the oldest shrines to "The Royal and Ancient Game" in Canada. Field's Drug Store on Main Street is also said to be the oldest drug store in Canada. There seems little doubt that it is the oldest in Ontario as it was established in 1820 and moved to its present quarters in 1866. The municipal offices are still located in the Town Hall which celebrated its one hundredth birthday in 1947.

Returning to more current matters, the Chairman of the Niagara Hydro-Electric Commission is L. S. Quinn, also a native of the town. The two Commissioners' posts are filled by Mayor Lewis McConkey and D. L. Young. Mr. Young is also Secretary of the Board of Education as well as being Editor and Publisher of the local newspaper "The Niagara Advance," published every week. In passing it might be mentioned that no less than twenty-three newspapers have been published in Niagara since the first issue of "The Upper Canada Gazette" came out on April 18, 1793. The paper consisted of four pages each 14½ by 9½ inches, and sold for a mere three dollars a copy.

Industries

Niagara could not be called an industrial centre. Indeed its atmosphere of rest and tranquility would be incompat-



MAYOR LEW McConkey was caught at his desk by the Hydro News' camera in the midst of a deep discussion with fellow-Commissioner D. L. Young. Mr. Young is Editor and Publisher of the weekly "Niagara Advance", the sole survivor of the twenty-three newspapers that have been published in Niagara since the town was founded.

ible with any other than its present environment. Nevertheless the industries for which the locality is peculiarly adapted do a steady year-round business. Shepherd's Boat Works specialize in trim, rakish motor craft and have a capacity of 200 boats a year. The plant has a permanent staff of thirty-six men operating the various types of wood-working equipment, which, of course, is all electrically driven. Plans for the future call for an expansion program that will step up production to one boat every twenty-four hours. Canadian Cannery maintain a canning plant which works at top capacity during the canning season and employs a skeleton staff for labelling during the rest of the year. The baskets made by the Canadian Wood Products largely find a market in the immediate neighbourhood where they are used in the packing of fruits and vegetables.

Although living in an atmosphere permeated with memories of the past, the citizens of Niagara have not been blind to progress. Currently an ultra-modern school is being erected on the site of the first Parliament Building and will be ready for its new pupils in the very near future. The Niagara Hydro-Electric Commission, according to Chairman Quinn, has the facilities for providing fast and efficient service for any of its consumers as well as using the most modern systems of billing and accounting. Mr. Quinn also added that such alertness is no innovation since Niagara was one of the first communities in Ontario to have electric lights,

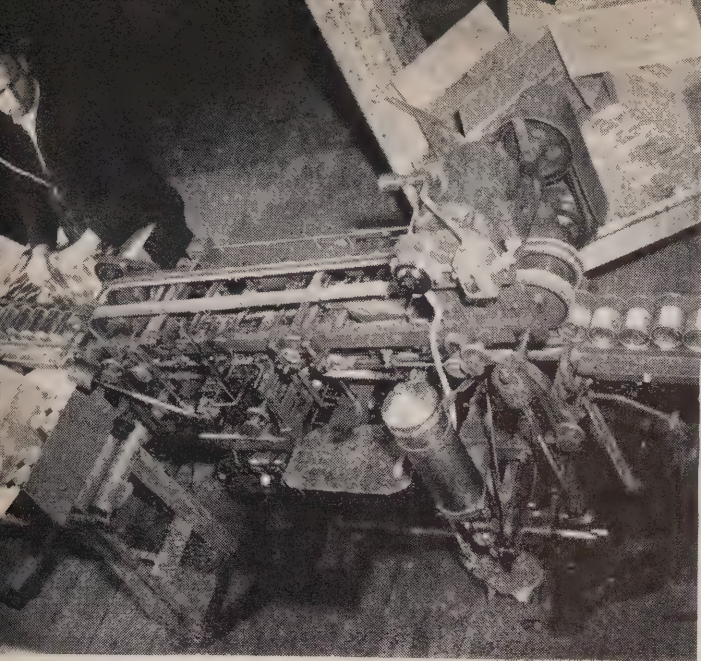
REGIONAL OFFICE AT PORT ARTHUR

D. I. Nattress, Manager of the Northwestern Region, The Hydro-Electric Power Commission of Ontario, recently took over his new quarters in the premises of the Port Arthur Public Utilities Commission. At present his staff numbers 17 people who occupy four rooms on the third floor and two on the second. Eventually, it is expected, the office will use an entire floor and number about 40 persons.

As Manager of the Northwestern Region, Mr. Nattress is in charge of all administration and operational activities of the district. The power plants at Cameron Falls, Alexander Landing, Ear Falls and Rat Rapids come under his jurisdiction, as will the Pine Portage and Aguasabon developments when completed.

having its own steam generating plant in action before the turn of the century.

Thus in retrospect it seems that in Niagara are combined the restful charm of the old with the less intrusive "improvements" of the modern era. Certainly its citizens have a heritage of which they may well be proud. Today their community stands foremost among the favoured spots where Nature and Man have combined efforts for the common purpose of making the earth more beautiful.



THIS ELECTRIC labelling machine in the canning factory can label 300 cases an hour when working at full capacity. As each case contains 48 cans of soup that means more than 14,000 tins an hour.



THIS WORKMAN is using the electrically driven stapler to put handles on baskets at the wood working factory.



SCHOOL CHILDREN pause on their way home to cast interested glances at their new ultra-modern building. The structure is being erected on the site of the first Parliament Building in Upper Canada.

THE MEMORIAL Tower to the sons of Niagara who gave their lives in World War I occupies a prominent position on the broad, shaded, main thoroughfare. The Town Hall is visible in the background.



HISTORIC FORT George, which has been restored according to the original plans, is a "must" for visitors to Niagara. This view from the bridge at the main gate was probably a familiar one to General Brock who lived at Fort George from 1804 until his death at Queenston Heights in 1812.



Hydro At "The Ex"

When the Exhibition opens on August 27, all eyes will be turned to the magnificent new grand stand which will have a seating capacity for 22,000 people, or 6,000 more than the old one which was destroyed by fire a little over three years ago.

With 600 men working on the construction of the project, it is expected that everything will be in readiness for the big show which, it is claimed, will be "bigger 'n better than ever before."

As might be expected, illumination plays an important role in the success of any stage performance, and F. C. Mayberry, Chief Engineer, is leaving no stone unturned to see that the very best lighting effects are available at the right time and at the right place. With this in mind the most modern lighting equipment, including spotlights and floodlights, are being installed on the roof of the grand stand and on the stage.

Obviously such an undertaking requires time, thought and experience and with the aid of a staff of over eighty, the Electrical Department of the C.N.E. has been working at top speed. It seems

by
Grace J. Carter
News Editor

there is a network of forty miles of underground lead-covered cable spread over the 350 acres at the C.N.E. grounds. In order to connect the new cable required for the grand stand, it is necessary to have a highly trained technician do the actual splicing in man holes about nine feet below the ground level. There are twelve of these man holes in the vicinity of the new amphitheatre and 108 throughout the grounds. The splice is made on three-conductor, lead-covered

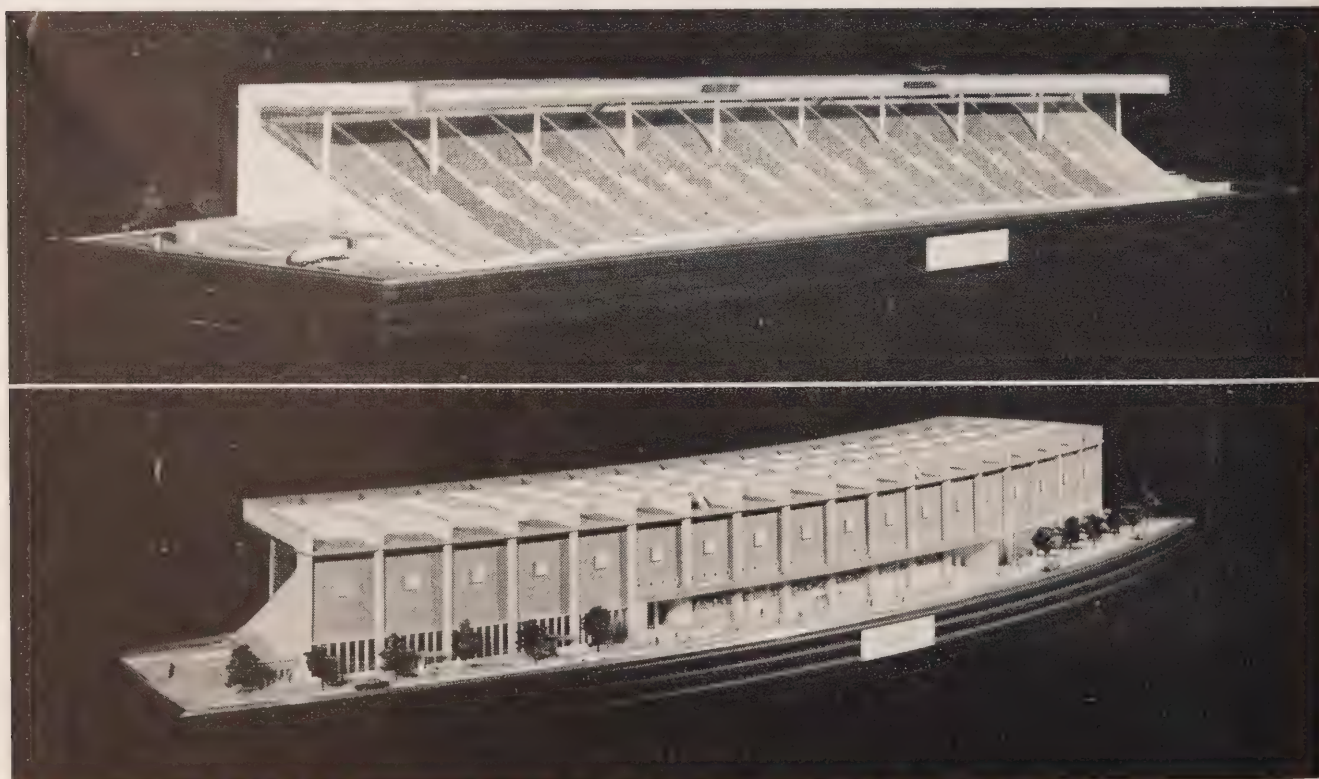
cable which is being fed from the main substation feeder. Each individual conductor is about one inch in diameter. When the splice is completed it is filled in with compound and cemented over to make sure that it is absolutely air and water tight.

Operates Own Substation

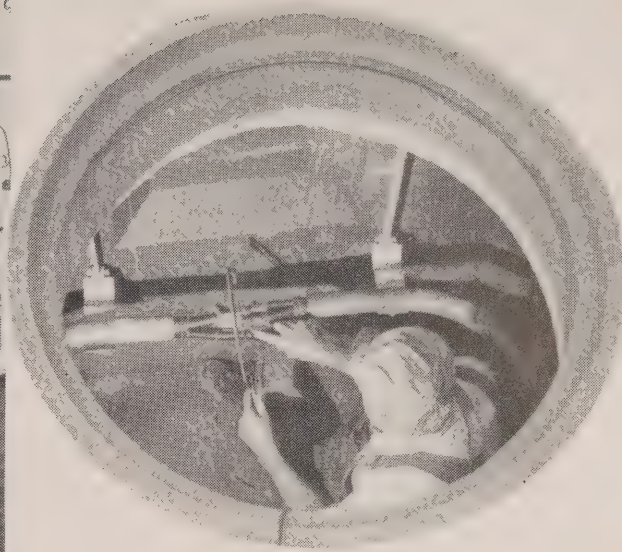
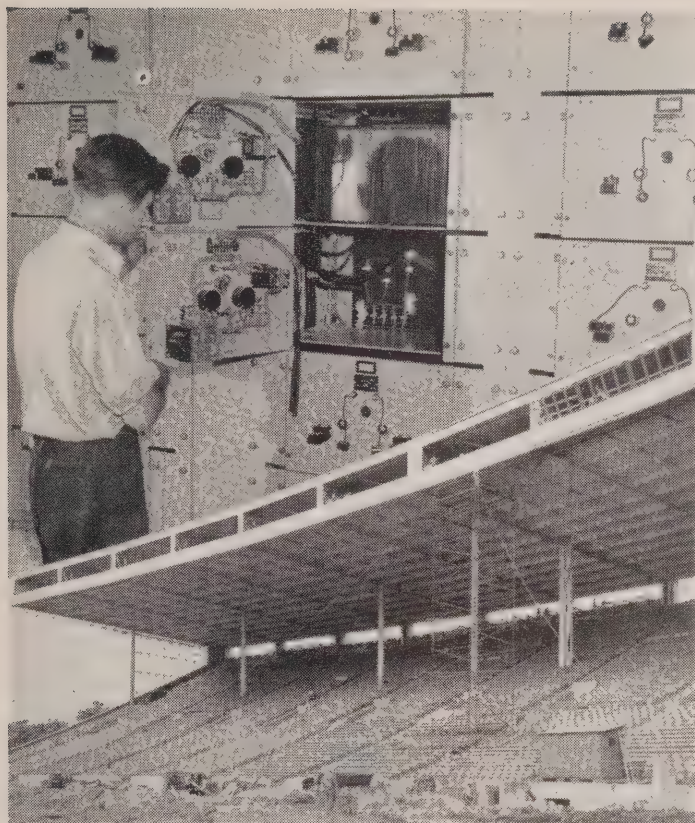
The role of Hydro during the 14-day period at the C.N.E. is recognized as one which is vitally linked with the proud record of achievement that has been attained by Canada's world-famous fair. This role assumes an increasingly important aspect as the Exhibition focuses attention upon new post-war advances in the fields of commerce, industry, agriculture, arts, crafts, and education.

The C.N.E. operates its own substation which receives power from Strachan Avenue plant of the Toronto Hydro-Electric System. The power supply is brought in at 2,200 volts and stepped down to the required voltages at the individual indoor transformer stations located in various buildings. For the grand stand there are three 100 kv-a. and two 600 kv-a. transformers which

Hydro Has Important Role In Assuring Success Of Canada's Big Fair—Interesting Illumination Effects To Be Featured At New Grand Stand—Opens August 27



THIS IS an architect's conception, front and rear views, of the new C.N.E. grandstand which will have a seating capacity of over 22,000. On the roof there will be accommodation for the press, a broadcasting room, special observation windows and, of course, facilities for lighting stage spectacles. Below the grandstand space will be available for exhibitors, two restaurants, storage room for concessionaires, dressing rooms, showers, and a first aid station.



UPPER LEFT: A section of the reactor board whose controls make it possible to dim the grand stand flood lights and house lights underneath the roof. There are forty of these reactors, each one being 12 kv-a., 100 amp.

LOWER LEFT: The new grand stand has a seating capacity of over 22,000. This reproduction shows the western end.

UPPER RIGHT: All cable at the C.N.E. is underground, and this illustration shows one of the manholes where the splicing of three-conductor lead-covered cable was being done to tie in the grand stand load with the main substation.

are used for lighting purposes and for energizing motors. Throughout the grounds there are seventeen indoor transformer stations with capacities ranging up to 1,500 kv-a. and eight dry type rooms (no oil) with capacities ranging from 150 to 300 kv-a. This supplies 60 and 25 cycle and direct current for the exhibitors and operates the amusements on the Midway. The 60-cycle power is provided through frequency changers. It is estimated that the total load this year will be 8,500 kilowatts, of which 1,500 kilowatts will be utilized by the grand stand.

The roof of the new arena is of upside down construction which means that all the steel supports are on top. This is so there will be a minimum of posts to obstruct the audience's view, and it also improves the general appearance. On the roof there will be a sound-proof room for broadcasting purposes; a press room; special observation windows, and of course the facilities for lighting the stage spectacle.

Two Restaurants

Similarly to the former grand stand there will be some space available in the centre for exhibitors of electric washers, ironers and vacuum cleaners. There will be two restaurants of the cafeteria type which will be equipped to feed 10,000

people every twelve hours. Each kitchen will have three adjoining bedrooms suitable for overnight staffs. In the lower part of the building there will be storage rooms for the concessionaires; team or dressing rooms for men and women; showers and a first aid room. It is expected that the grand stand facilities will later be used for general sports throughout the year. Main access to the building is by ramp and all the approaches have rolling steel doors. It is claimed that this arena can be cleared in seven minutes, which is obviously

important in case of fire.

Another interesting point is that the new amphitheatre is essentially Canadian built. The only exceptions to this are the rectifiers for direct current and an emergency generator set which were made in England, and the arc spotlights which came from the United States.

It is with considerable anticipation that Toronto citizens and many thousands of visitors await the opening of the world's largest annual exhibition which gives every promise of surpassing even its fine record of achievement of former years.

Place Steel Gates at Aguasabon Dam

An event of historical significance occurred recently at Terrace Bay when the normal flow of the Aguasabon River into Lake Superior was blocked by two steel gates in Hydro's 1,400-foot dam across the river.

The lowering of the gates into position means that the water will now back up and flood an area of nearly 4.1 square miles northwest of the dam. Water from the storage area, known as "Blue Jay Basin", will eventually drop down a 270-foot concrete-lined shaft and flow 3,500 feet through a horizontal tunnel to a 15-foot penstock, thence through a "Y"

channel to the two turbines.

Ultimate installed generating capacity of Aguasabon Development will be 40,000 kilowatts (53,000 h.p.) with the first unit scheduled to go into service early in September of this year.

At the brief ceremony, preceding the actual closing of the gates, Robert H. Saunders, C.B.E., K.C., Chairman of the Commission, stated that the occasion was an important milestone in the history of Northern Ontario, and a striking example of co-operation between a private enterprise (Long Lac Pulp and Paper Co. Ltd.) and a public utility (Hydro).



August—and it's time to get rid of those prevalent pests! Flies and mosquitoes in particular combine to make life miserable until you use an insecticide. If we all used an insecticide of some kind and did our part to discourage flies by wrapping or covering rubbish, our leisure hours would be more enjoyable.

Cooking supper in an apartment after a busy day at the office can "take the starch out of you" if you do not consider short cuts. Take a tip: prepare meat in part before you leave for work in the morning. Then pat a meat loaf mixture into a tube cake pan and it will bake in 40 minutes. This method saves electricity, too.

Place stuffed green peppers in a muffin tin while baking to keep them in shape.

Fresh peas stay green and will not shrink if a couple of lettuce leaves are put on top of them while cooking.

This is the ice age! Freeze tomato juice in the freezing tray with an olive in each section, then add to glass of tomato juice. The tomato cocktail will not taste diluted.

Consider the time and place of a picnic lunch. Custard tarts replace juicy pie, bananas and apples do not drip like melon and peaches; and cookies do not crumble as much as cake.

A cupful of medium white sauce, a can of salmon, strips of green pepper combined with a large package of crushed potato chips, baked for a ½ hour in a moderate oven makes a tempting supper dish.

So nice to come from vacation and have fresh greens and milk within half an hour—that only happens if you leave the order with the grocer before you pack your bag. It may not always be the case, but using a train schedule, we can do this sort of thing.

PICKLED COBS OF CORN

2 cups vinegar
2 cups sugar
1 tsp. whole cloves
2 tsps. whole allspice
1 bay leaf.

Use about 12 tiny cobs of sweet corn, about 3 inches long. Husk and remove silk. Parboil in hot salty water 3 mins. Make syrup of vinegar, sugar and spices which have been tied in a bag . . . boil 5 minutes. Drain the corn and put into syrup. Let stand overnight, then bring to a boil and seal in small salad dressing jars. Store 2 months before using.

MINT PEARS

Pare (leaving stems on) 24 pears and put in salty water to prevent discoloration. Make a syrup of 2 cups water, 2 cups white sugar, boil and add ¼ tsp. mint extract and ¼ tsp. green coloring. Fill three sterilized pint jars with pears and cover to within ½ inch of top of jar with syrup. Partly seal; place jars on jelly roll pan on oven shelf of a preheated electric oven at 275 degrees. Process 45 minutes. Remove jars and seal. Cool and store. Red pears may be canned in the same manner using red coloring and a little cinnamon.

It's six of one and half a dozen of another when you compare the added cost of commercial pectin and extra sugar to the quantity of jam you'll bottle. So, if you do not test for pectin or acid content of fruit, use pectin method, following directions carefully.

Jam and jellies which do not set may be boiled again to produce a more concentrated product, but if you make a mistake with commercial pectin there's not much you can do except to bottle and use as sauce or in muffin batter, etc.

An oil company has been giving away the gadget you glue on the side window of the car on which to hang your coat. Wish another concern would give away a shoe bag to use on the back of the front seat. We loathe wrapping shoes to take on our travels . . . Of course, you could buy one.

Add a dash of mustard and a sprinkle of nutmeg to thick mayonnaise, then serve to accompany tomato salad as a delectable surprise.

For easier, faster canning use a food mill to make juice extractions, and a funnel for bottling.

Hanging plants on the porch can be watered right over the magazine rack if you keep an oiled-silk dish cover over the bottom to catch the drip.

Answer to question: Citron will be stored until November or January, then made into marmalade, as citron is rather insipid in flavour.

Two-course meals in the form of meat with vegetables, then fruit in a pie or pudding has become a steady habit for many. For a delightful surprise serve a fruit salad for first plate then a peach and cheese omelet for dessert.

Crystallized ginger is worth the price. A few slivers in cottage or cream cheese adds a certain something to such a bland food.

It's such a waste to throw out onion tops that we decided to try them sautéed and heated in creamed corn—lots of them, and you'll like them too. Plan to serve with ham.

How good the first slice of watermelon tastes this year. Maybe it's because the melon was grown on the old homestead.



JOHN FRANCIS WALSH

Nineteen years as a lineman and three years as Manager is the service record of JOHN FRANCIS WALSH with the Niagara Hydro-Electric Commission at Niagara-on-the-Lake.

Born in Niagara on June 15, 1900, Mr. Walsh received his primary and high school education there. In 1942 he enlisted in the Royal Canadian Engineers at Toronto, and before his first day's service had been completed he had been posted back to Niagara where he remained until his discharge in 1945. Upon returning to civilian life he was appointed Manager of the Hydro-Electric Commission.

Mr. Walsh is married and the father of a son and two daughters. He is a keen follower of hockey and baseball and a member of the local cribbage club. For the past six years he has served on the Board of Education.

DOUGLAS L. YOUNG

DOUGLAS L. YOUNG, Editor and Publisher of "The Niagara Advance", is serving his second year as Commissioner on the Niagara Hydro-Electric Commission.

In addition to his journalistic activities Mr. Young is Secretary of the Board

of Education of which he has been a member since 1934. In 1940 he held the post of Chairman. He has also been closely connected with the Boy Scout Movement for the past 38 years.

Mr. Young was born in Hamilton, August 3, 1898. He received his education at the public and high schools in Kincardine, Ontario. During the War of 1914-18 he served overseas with the 72nd Battery, Canadian Field Artillery. Married and a family man, he has two daughters and three boys, one of whom assists him with the weekly editions of "The Advance".

LEWIS W. McCONKEY

LEWIS W. McCONKEY, in his fifth term of office as Mayor of Niagara-on-the-Lake, is a native of Bradford, Ontario, where he was born November 7, 1900. He was educated at the Bradford Public and High Schools before graduating from the University of Toronto in 1923.

After serving on the town council in 1943, Mr. McConkey was elected Mayor the following year and has held the office since then. In the summer he operates "McConkey Manor", a popular hotel for visitors to the district. He is Vice-President of the Lions Club and President of the Niagara Hospital Board. This is his fifth year as Commissioner of the Hydro-Electric Commission.

In his college days Mr. McConkey was a member of the University of Toronto hockey team and still bears a facial scar received in an inter-collegiate ice engagement. Now his main athletic interests are confined to riding and pursuing that small white sphere over hill and dale at the local golf club.

PLANNING FORMATION OF A.M.E.U. BRANCH

Plans are now under way for the formation of a new branch of the Association of Municipal Electric Utilities to encompass the managers, engineers and employees of local commissions in Hydro's West Central Region, it has been announced.

A three-man committee has been ap-



LINCOLN S. QUINN

LINCOLN S. QUINN, Chairman of the Niagara Hydro-Electric Commission, has been identified with that organization for 17 years, during six of which he served as Secretary-Treasurer.

Mr. Quinn is a native of Niagara and received his education there. He is employed by the Department of National Revenue, and has served (in the past) on the town council. A veteran of World War 1, Mr. Quinn has remained active in the work of the Canadian Legion. He is married and the father of one son.

pointed to draw up a slate of officers for presentation at a fall meeting in Kitchener. It consists of Norman Grandfield, Assistant Manager of the Brantford Public Utilities Commission, Arthur Bromley, Chief Engineer of the Kitchener Public Utilities Commission, and H. Allan Howard, Manager of the Brantford Township Hydro-Electric Commission.

The region embraces 69 municipalities and extends from Hamilton to Goderich. The province is divided into nine regions, but so far only two of these, Toronto and the West Central Region, have taken steps to form regional branches of the A.M.E.U.

PORCELAIN POLICEMEN

(Continued from page 17)

The surfaces are then sponged over and the pieces given a final drying. This is carried out in a tightly-closed chamber equipped to provide just the right amount of humidity to retard drying until the clay is evenly heated throughout. Drying time averages about five days.

After a rigorous inspection, the parts are now passed on for glazing.

Glazing Operations

As we came upon the scene, the glazing section presented the appearance of a millinery shop invaded by artists. A circle of posts surrounded the glazing tables and on each post reposed one of the domed insulator discs which has just passed inspection. Craftsmen were busy spraying and painting these porcelain "hats", which, as they were finished off, were passed on to another group whose business was to sand the bosses so as to provide them with a firm grip for the metal cap which would be fitted over them.

Glazes supply a brilliant and smooth surface which resists the accumulation of dirt deposits and will not crack under temperature changes. The quality and not the colour of the glaze is the important thing insofar as insulating is concerned but brown and chocolate are the standard tints. A special glaze is used when it is necessary to provide against interference with radio reception.

In this respect it is interesting to note that porcelain, perhaps the greatest of all insulating materials, is not without its "tendon of Achilles." Just as the wonder man of the Greeks was invulnerable except in one spot, so it is with porcelain. And this spot is its comparative fragility to impact. Heat and cold, strain and stress—these mean nothing to a wet process insulator. But a ten-year-old boy with a sling or an air-rifle can do damage that may place a power circuit temporarily out of commission. For this reason the Canadian Porcelain Company puts a dark "protective colouring" on the insulators it makes for Hydro, hoping through this means to make them less conspicuous, thus securing greater immunity for the equipment guarding those Hydro power services which play such an important and vital part in the welfare of every man, woman and child in Ontario.

After glazing and sanding, the insulator parts are ready for firing. This process is carried out in continuous oil-fired kilns designed and built by the company's own engineers and said to be among the most modern on the American continent. There are two of them, each 200 feet long, and their combined monthly production is equivalent to 72

TO BUILD NEW STATION WEST OF PETERBOROUGH

Purchase of a large tract of land, three miles west of Peterborough, for location of a large, new transformer station, at an estimated cost of approximately \$5,000,000, was announced recently by Robert H. Saunders, C.B.E., K.C., Chairman of The Hydro-Electric Power Commission of Ontario.

The new Hydro site—to be known as Peterborough Transformer Station—is situated adjacent to the Lindsay-Peterborough line of the C.N.R. At this point, the necessary facilities will be installed, during the next three years, for delivery of additional power to Peterborough, and other districts in Eastern Ontario, from Hydro's Chenaux Development, which is now under construction on the Ottawa River, 60 miles above Ottawa.

Chenaux is scheduled to have six of its generating units in operation by 1951 and the remaining two during the following year. Final installed generating capacity will be 119,000 kilowatts (160,000 hp). In conjunction with construction at the 25,000,000 Chenaux development the Commission plans to build one or more 230,000 k.v. transmission lines from the development across most of Eastern Ontario, to serve various parts of the province. A portion of the Chenaux power will be received at Peterborough Transformer Station where it will be stepped down to 115,000 volts, for transmission to other distribution points in this part of Ontario. Equipment will also be installed at this station for stepping down the 115,000-volt power to 44,000 volts for distribution to consumers in the immediate area.

firings of the older type of intermittent kiln.

It takes 65 hours for a batch of insulator parts to pass through one of the new kilns. Standing at the door of the entrance vestibule is like taking a Turkish bath. Through a small window, you glimpse, far off in the distance, as it seems, beyond the yellowy glows of the furnace, a ball of fire which is nearly as hard on the eyes as the sun at mid-day. This is where the temperature rises to 2,300 degrees Fahrenheit; but the insulators have to be brought gradually into this extremely high temperature and it will be several hours before they reach this section. When they have passed through it, vitrification will have been completed and the rest of the journey will be spent in "cooling off" — a retarded process from which the pieces emerge still just a little too hot for you to place your naked hand on them.

Firing converts the ingredients of the clays, under their cover of glaze, into a hard, white porcelain having great tensile, crushing and dielectric strength.

When the pieces are removed from the padded kiln cars, samples are taken

and broken for the porosity test. The fragments are immersed in a dye solution at a pressure of 4,000 pounds per square inch. If after 24 hours no dye has penetrated into the porcelain body, the lot from which the samples have been taken is passed on for thermal and electrical tests. In the case of suspension insulators this is followed by bituminous coating, mounting of the metal cap and cementing of the metal pin. Finally, the porcelain shells are electrically tested under stress.

Before assembling, all contacting surfaces of the porcelain and hardware are given a treatment or asphalt paint. After a cleaning and final inspection the assembled insulators are crated for shipment.

The Canadian Porcelain Company Limited is now making about 12,000 insulating pieces a day — large and small. This per diem production necessitates the use of about 40 tons of clay, and approximately 300 employees are engaged in its processing. In spite of the increasingly heavy domestic demand, token exports are now being made to India, South Africa, South and Central America, Mexico and, on a somewhat smaller scale, to other countries. During our visit, it was interesting to see a shipment being prepared for Eire where recent waterpower developments, to a considerable extent, have been modelled on the Hydro system.

Jobs For The Crippled

Returning from the shipping room to the office, we paused a moment to watch a man who was working at a machine which turns out the rings or plates that are used for firing the "goose-necks" supplied to insulators in transformers. He was totally blind.

"We have two other men working here who have only ten percent vision," Mr. Morden told us when we rejoined him in the office. "Then there is a deaf-and-dumb man and a cripple. We happened to have a few jobs around the plant which we thought they might be able to handle and we couldn't see any good reason why they shouldn't be given a chance. So here they are and doing surprisingly well, too. That blind man is actually earning a production bonus on his job. It's good business, when you can, to employ men like that."

Yes, we thought, it was good business . . . but what a lift to the self-respect of a man to find himself happily engaged in gainful employment when otherwise he would be dependent upon public or private charity. We wondered at the patience and care that must have been exercised in breaking these physically handicapped men into their jobs. But Mr. Morden, looking suddenly down at his watch, interrupted our train of thought.

"You said you had to be in Niagara Falls by six-thirty."

#his and #hat

One of the charming lady members of our staff swished into the office recently and declared: "You men are so lucky." We were perplexed at first but when we heard the story we told the lady to write it. We thought it would do some good if she could "blow off a little steam." So here it is:

"Women have their troubles—for instance, take the ordeal of getting your 'hair done.' Having made your appointment with the hairdresser days ahead, when the time finally arrives it turns out to be one of those hot, sticky, sultry days that makes life so difficult. However, at the exact minute of closing time you dash out of the office, run for a street car, which of course is crowded, and if you are lucky enough to squeeze on, you get pushed, shoved, toes trod on and eventually arrive at your destination, hot, tired and completely out of sorts.

"If you have five minutes to spare you rush into the nearest restaurant and hastily eat a somewhat dry sandwich and gulp down a cup of warm, weak coffee. You dash into the hairdressing salon and are quickly ushered into a cubicle. The operator shampoos your hair and then the tangled mass is laboriously combed. Next your topknot is placed into waves and tight little flat curls which are fastened down with metal clips and hairpins. Then you are ready for the drier where you have the privilege of sweltering for upwards of an hour.

"By this time you have looked at all the available magazines, both old and new; you have fidgetted and squirmed and are thoroughly hot, tired and hungry. Finally after what seems an age (and is actually about two hours) the operator comes, lifts the drier from your head and announces that you are dry—with which you heartily concur. The pins and clips are removed; your hair is combed and gently pushed into place, you pay the operator and then as you limp home to a much belated cold, soggy dinner you say to yourself, well that job is done for another few days. But aren't men lucky!"

We have always been proud of the fact that we were familiar with almost every nook and cranny of Ontario until we came across a new place the other day. Our discovery came as a delightful surprise during a motor trip through that historic section of the province between Kingston and Gananoque on Highway No. 2. Here is situated the Abbey Dawn estate, whose gates have been opened to the public by its owner, Wallace Havelock Robb, in the belief that beauty must not be hoarded. This Canadian nature poet has made Abbey Dawn—in the heart of the Thousand Islands district—a haven for all things romantic and enchanting. Mingled with the singing of birds—for Abbey Dawn is a bird sanctuary, too—the rich mellow tolling of "Gitchie Nagamo" greets the summer traveller. "Gitchie Nagamo" is the euphonious English equivalent of "Beautiful Voice" and is one of the great bells of the world, ranking alongside such famous bells as London's Big Ben, Philadelphia's Liberty Bell and mystic Burma's Amarapoora. It bears the beautiful inscription:

"I give my soul to the silent Dawn
And it goes
Where the song of the birds
Has gone."

in memory of an unknown poet of the Red Man in whose memory it has been cast.

The abbey contains an art gallery and a museum which houses an outstanding collection of relics of a vanished race, all making a visit to Abbey Dawn an unforgettable event.

Holidays are now a popular subject, and the usual fishermen's stories are circulating around the Administration Building. After listening to many incredible tales of prowess, Hydro News decided to pass this Aesopian tidbit on to its readers.

While staking out a rural power line, Hydro picketmen came across a garter snake. Now this harmless creature is the antithesis in character of the venomous species. It has a kindly disposition, and although it may take the odd swallow at a hen's egg—just as a schoolboy sneaks a piece of pie from the larder—it knows it is doing wrong and tries to make up

for this paltry misdemeanour by cleaning up on all the mice and vermin it can find in the farmer's fields. Realizing this, the Hydro men, instead of killing it, gave it a drink of tinned milk as they sat down by the roadside for lunch.

Towards evening just as they were about to call it a day, the picketing crew came to the bank of a stream. Below the surface they could distinguish the shadowy outlines of fish. The picketmen improvised a rod and line and filed a hook out of some wire. But they had no bait with them and search as they would they could find nary a worm or slug. They were about to give up and return to the truck which was parked on the road nearby when one of them felt something brush against his leg. It was the garter snake they had entertained at lunch and it carried a frog in its mouth.

* * *

Members of the Electrical Maintenance, Municipal and Operating Line Crews at New Liskeard in the Northeastern Region were recently called into action to perform a service quite removed from their usual call of duty.

The occasion was the drowning of two-year-old Ricky Dill of New Liskeard. The lad was staying with friends, owing to the illness of his mother, and wandered out of the house unnoticed. When the lady who was looking after him detected his absence, a scant two minutes later, she went outside and found him lying beside the dock in two feet of water in the nearby Wabi River. Carrying him to shore, she immediately began artificial respiration. A few moments later she was relieved by crews from Hydro and the Northern Telephone Company who alternated unceasingly for the next three hours, in ten-minute shifts. However, their efforts proved of no avail and the lad was pronounced dead.

No effort was spared in the fight to revive the youngster, extension cords being utilized to operate heating pads, and the use of hot water bottles and blankets. It is estimated the child could only have been in the water for three minutes at the most.

VITAL POWER LINK

(Continued from page 12)

be transmitted to Westminster where it will be converted into 25-cycle power, thus supplementing the available supplies from Niagara River generating stations.

In order to convert power from one frequency to another, Hydro is installing three frequency changer units at Westminster. These units are massive pieces of equipment, each weighing almost 500 tons.

This station, as its name implies, will have another important function; that of stepping down or transforming the 230,000 volt power from new Ottawa River plants to 115,000 volts. This power will then be transmitted in all directions at this lower voltage to the 60-cycle distribution points.

Facilities will also be installed here to step down 60-cycle power still further—from 115,000 volts to 13,200 volts. This lower figure represents the limit voltage for power while the frequency is being changed. Passing from the frequency changer units, the power will be stepped up again to 115,000 volts. Likewise, if additional 60-cycle power is required, the 115,000-volt 25-cycle power will be stepped down to 13,200 volts for frequency conservation. Then it will be stepped up to 115,000 volts for outward transmission.

Increasing Demands

This brief outline of the facilities to be installed at Hydro's new Westminster Station, during the next three months, emphasizes the vitally important part it will play in the distribution of power throughout Western Ontario, where industrial and agricultural expansion has created an almost insatiable demand for electricity.

That is why this Hydro site is the scene of such concentrated activity just now.

A construction camp has been set up in conjunction with the project to accommodate the 500 men engaged on this work. The camp site includes a modern, completely-equipped cafeteria, capable of seating 400 men at one meal and sleeping accommodation for 200 of the workmen. Recreational facilities are provided in a special section of one of the camp buildings. In addition, a baseball diamond has been established, while provision has been made for swimming at nearby Pond Mills.

Ultimate Cost \$9,000,000

The ultimate cost of the Westminster project is presently estimated at approximately \$9,000,000 and it is expected that it will be in initial operation by October of this year.

Work began on this site, which is located on a 45-acre section of Hydro

Chairman Wants Young People To Visit Ontario Hydro Plants

Commission Chairman Robert H. Saunders, C.B.E., K.C., plans to enlist the support of service clubs in a plan which will make it possible for children of school age throughout Ontario to visit the various Hydro power plants and sites and learn at first hand what Hydro means in relation to the future economic development of the province and of the many opportunities awaiting young people in Ontario.

Reference to the plan was made by Premier George A. Drew when speaking at the opening of the fourth unit at the Ear Falls plant on July 27, when he stated: "Mr. Saunders, who has brought to his important task great vision and enthusiasm as well as great ability, has developed a plan under which he is

going to enlist the support of service clubs in this area and in other communities to arrange trips for young people of school age to these great power sites so that they may learn for themselves the reasons for confidence in the future."

The Premier emphasized the vast development which was taking place and which would continue to take place in practically every field of production in Ontario in the years ahead.

"On the way to the various plants," he continued, "our young people will see something of the enormous areas that are open for development and the tremendous possibilities available to those who are prepared to work."

property, last November and continued throughout the winter. Today the station is gradually assuming definite proportions, with one main building dominating the scene of operations. This main structure—220 feet long and 60 feet high—will house the three frequency changer units, and will also provide space for maintenance rooms at one end and the overhead crane for moving heavy pieces of frequency changer equipment.

From top to bottom, workmen swarm over this building like human flies, performing the multitude of jobs involved in completing its erection. A new type of tiling—a compound of asbestos and cement—is being used for the exterior walls of the building. This new tiling is applied in large sheets over the steel framework of the structure while the interior will be finished with a special type of "poloite" board. Rock wool is being used for insulation purposes.

Auxiliary Buildings

Nearby, carpenters, bricklayers, and plasterers are now putting the finishing touches to two smaller, yellow brick buildings. One—the larger of the two—will serve temporarily as a control building and subsequently it will house protective relay equipment, while the other is designed to accommodate the station's com-

munication system.

Scores of other workmen—bronzed by the hot, summer sun—are engaged in preparing the footings and erecting steel towers for the 25- and 60-cycle areas which are located at each end of the frequency changer building. These areas will be terminals for power of both frequencies and banks of transformers will be set up in these areas for transforming power to the required voltages.

Another bank of six transformers will be set up adjacent to the frequency changer building to step down power to 13,200 volts for frequency changing purposes.

Westminster is the second frequency changer and transformer station to be built by the Commission as part of its postwar programme. The first was opened at Scarborough in 1947 and facilities of that station are now being extended.

Moreover, the Commission recently completed negotiations for the purchase of property near Sudbury for erection of a third station of the same type.

EXTENDS ITS LINES

(Continued from page 14)

this area, it is understood that it has under advisement a plan to construct rural lines there and to extend rural services. If this scheme is carried out, it was learned that operating conditions will be practically the same as those prevailing in other parts of the province at the present time.

The work accomplished in the rural field this year is suggestive of what will be achieved when all bottlenecks are cleared and more power is available. And now that the Hydro Rural System has been reorganized under nine regional headquarters, it is pointed out that the closest touch can be kept at all times with local requirements.

O.M.E.A. MEETINGS

District No. 2, Georgian Bay Municipal Electric Association is scheduled to hold its annual meeting on Thursday, September 2 at Owen Sound. According to Herman S. N. Denef, Secretary for this district, the meeting will convene at 10 o'clock in the morning.

District No. 3 will hold its meeting on September 8 and 9, with convention headquarters at Fort Frances.

Lighter Lines



"Certainly I love you for yourself alone—and when we're married I don't want any of the family thrown in!"

They say a reasonable number of fleas is good for a dog—keeps him from broodin' over bein' a dog.—E. N. Westcott.

The modern home is one in which a switch regulates everything but the children.

An opportunist is a man who, finding himself in hot water, decides he might as well have a bath anyway.



"He grants her smallest wish—provided it's small enough."

"Stand up," shouted the evangelist. "Stand up, if you want to go to heaven." Everybody stood up but one old man. "Don't you want to go to heaven?" asked the evangelist. "Sure I do," replied the old man, "but I ain't goin' with no excursion."

It was an Irish lover who said, "It's a great comfort to be alone, especially when yer swateheart's wid ye."

A well meaning but particularly prosing judge on one of his country circuits had to try a man for stealing a quantity of copper. In his charge he had frequent occasion to mention the "copper" which he uniformly called "lead" adding, "I beg your pardon, gentlemen,—copper; but I can't get the lead out of my head!"

Then there is the one about the disillusioned wife who wrote to her sister and said, "My better half, or my worse, whichever you choose, has been ill, but nothing to make me hope or fear."

When a public speaker asked the chairman how long he should speak he was told to watch the audience's reaction. "If you haven't struck oil in five minutes," the chairman said, "quit boring."

"Your leisure hours must be quite a problem," a friend joshed the busy executive.

"The only problem I have there," snapped the executive, "is how to keep other people from wasting it."

Money may be the husk of many things, but not the kernel. It brings you food, but not appetite; medicine, but not health; acquaintances, but not friends; servants, but not faithfulness; days of joy, but not peace or happiness.—Henrik Ibsen.

No one can defeat us unless we first defeat ourselves.

God made man a little lower than the angels, and he has been getting a little lower ever since. Will Rogers.



"I've suspected right along you need glasses!"

Willie's grandmother had come to visit them.

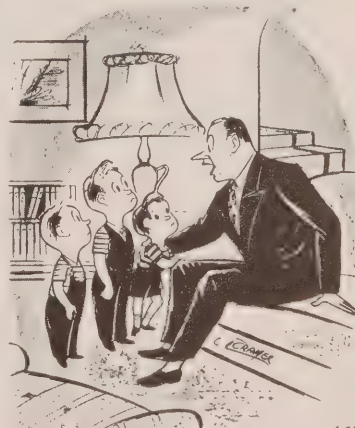
"Are you Mamma's mother?" asked Willie brightly.

"No dear. I'm your grandmother on your father's side."

"Well," said Willie thoughtfully, "all I've got to say is you're on the wrong side."

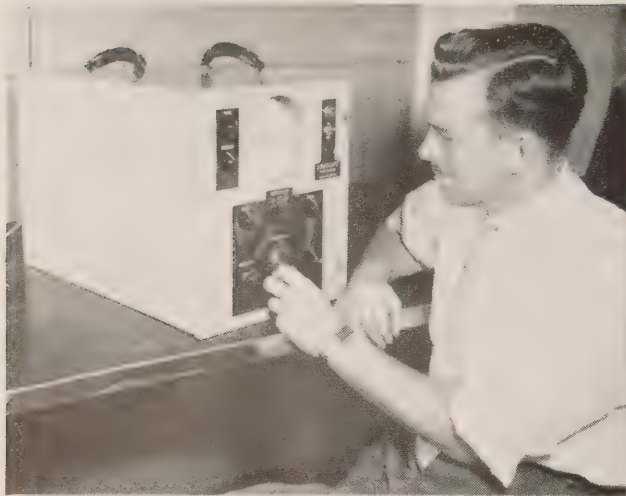
A client remarked to his solicitor, "You are writing my bill on very rough paper, Sir."

"Never mind," was the reply, "it has to be filed before it comes into court."



"Starting the first of the month, all allowances will be \$15 per week—of which \$14.50 will be deducted for board and room!"

HYDRO AT WORK



Hydro's Linascope

Depicted above is the Linascope, one of the latest "brain children" to be developed by the electrical research division of the Hydro Laboratories.

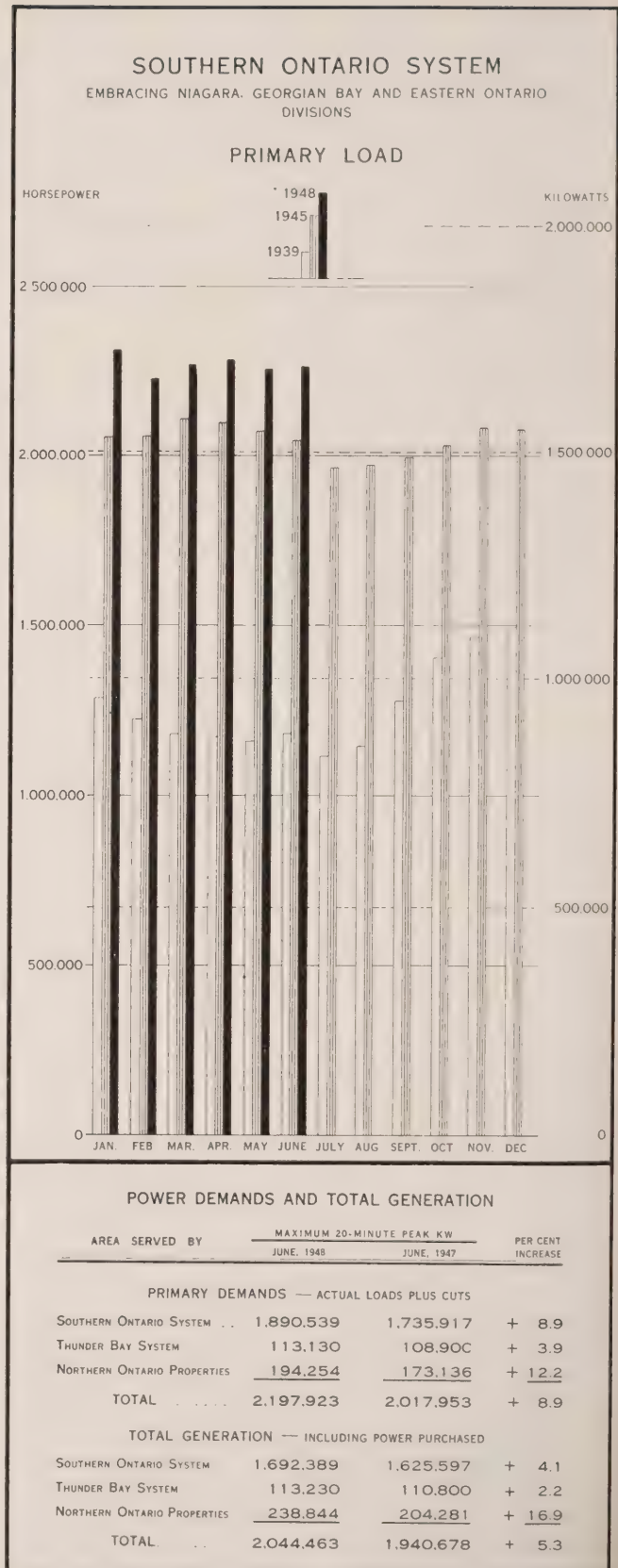
Function of the Linascope is to locate failures on open wire telephone and transmission lines. Previously, the only way to track down a failure on a line was to wear out a large amount of shoe leather trudging along and making a visual inspection of the line from one end to the other. With the use of the Linascope it is claimed that a trouble spot on a 300-mile line can be traced to within a mile or less of its source.

Basic factor in the operation of the device is the cathode ray tube—fundamental unit in the successful development of radar and television. A pulse of moderate voltage and of only ten microseconds duration is transmitted from the Linascope along the line to be tested. When the pulse strikes a fault, part of it is reflected back to the transmitter. The beam of the cathode ray tube is synchronized to move across the screen of the tube at a rate proportional to the speed of the pulse along the power line. Thus the "echo" caused by the fault appears on the screen at a point corresponding to its actual location. In effect, the operator sees before him a "picture" of the line that may be interpreted in considerable detail. The distance to the fault can be obtained simply by measuring the distance along the screen, but greater accuracy can be obtained through the use of a range finder control.

At the present time, Linascopes are being constructed for use at Leaside Transformer Station, Ear Falls, Cameron Falls, and the Communications Sections of the Operating Department at the Administration Building in Toronto. These units have mileage scales of 50, 100, 200 and 300 miles.

Further experiments are currently being carried out at Leaside with the Linascope in an effort to locate transient faults caused by lightning. The unit is coupled to the 220 Kv circuit to Chats Falls by a carrier-type capacitor. The line is continually monitored and photographic equipment automatically records the picture of the line when a fault occurs.

In the picture above, the compactness of the unit is readily evident. The operator is Keith H. Kidd of the Commission's staff, who along with J. R. Leslie, was the co-father of the Linascope.



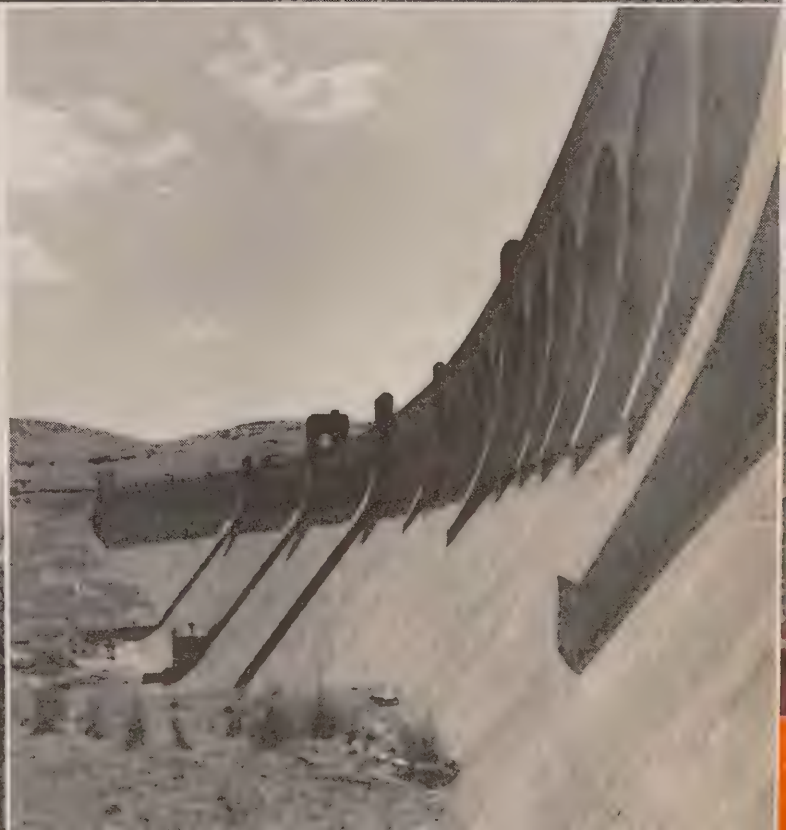
GALLOWAY POWER SCHEME PART OF BRITISH "GRID"

COMPLETED JUST before the war, the 100,000 kilowatt Galloway Hydro-Electric Scheme is an integral part of the British "Grid" of 132,000-volt transmission lines which now cover the country. The upper photograph is an aerial view of the Tongland Power Station which is part of the Galloway Scheme. The valve, shown in the lower picture, has a discharge capacity of approximately 5,500 gallons per second and discharges water either from a tributary of the River Dee when in flood, or from Loch Doon, a storage reservoir.



LOWER LEFT—Single circuit pylons carrying power in the area of the "Grid" served by the Galloway Scheme, which comprises nine dams, seven storage reservoirs and five power stations.

LOWER RIGHT — Clatteringshaws Dam with a storage of 1,250,000,000 cubic feet of water creates a central storage reservoir. This is a concrete gravity dam, 78 feet high and 1,470 feet long.





"What do you mean . . . I'm lucky?"

Lucky lad! Getting snagged on the wire in his effort to climb over a Hydro barrier . . . probably to recover a ball . . . may have saved his life. Some boys have not been so lucky.

Hydro energy is one of the finest things we have in Ontario to make for better living. But it can stop one from living, if you thoughtlessly give it a chance to flash through your body. Every possible precaution for safety is taken by your Hydro; but once in a while someone gets careless or "takes a chance", and tragedy strikes. A boy climbs a pole and touches a wire. Or he flies his kite near a Hydro line, and it contacts a high-voltage circuit and carries death or injury to whoever is holding it. Sometimes a storm breaks down a line and someone takes hold of the broken live wire with disastrous results. These are just examples of acts that are beyond the power of Hydro to prevent. Your Hydro can only warn of danger, and seek co-operation of parents and teachers and all who have influence with those who might expose themselves to that danger.

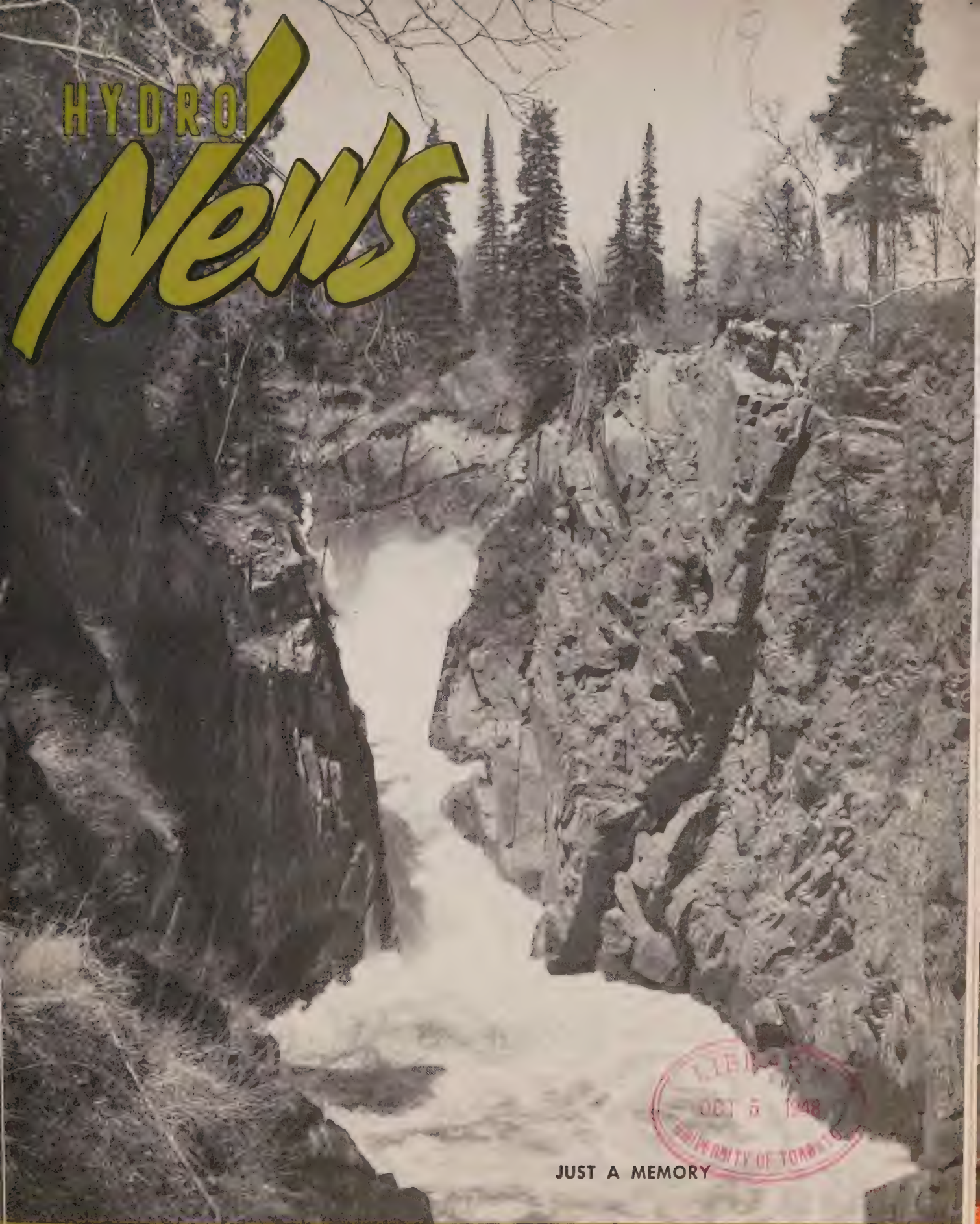
Hydro need never be a threat to anyone who:

1. Will not climb poles.
2. Will stay away from distribution lines and transformer stations.
3. Will keep away from fallen wires.

For your safety, in case of trouble immediately notify your nearest Hydro office. But never, never touch a fallen wire.

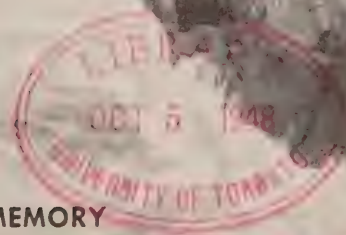


THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO



HYDRO

News



JUST A MEMORY

YOUR HYDRO CHAIRMAN REPORTS

on the Power Shortage



THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

620 UNIVERSITY AVENUE
TORONTO 2

ROBERT H. SAUNDERS, C.B.E., K.C.
CHAIRMAN

September 11, 1948.

Dear Fellow Citizens:

The demand for electricity from all classes of the community - homes, farms and industries - all over Ontario, is still mounting. Homes are being built, the demand for increased production from farms is steadily increasing and industry is pressing forward with plans for expansion, plans that mean greater production and more jobs to keep Ontario prosperous.

It is anticipated that the increase in demand over the available supply will amount to in excess of four million kilowatt hours per day, and conservation measures have been put into effect as of Tuesday, September 14th. These will include reductions in the supply for show windows, office lighting and certain industries, banning outdoor electrical signs and in other ways. Even with all these reductions we will still be short 1,200,000 kilowatt hours per day but to insist on more would have a hampering effect on industry and seriously reduce employment.

Where then can we get the vitally needed power? From you and every individual Hydro user in Ontario. How much should you save? Take a 60-watt electric lamp as an example. For every 24 hours it burns, it requires almost one and a half kilowatt hours of current. If every one of the 900,000 Hydro users in Ontario will save the equivalent of that much electricity every day there will be no need for cut offs.

Everyone must do his or her part. It should be a 24 hour effort. Turn off every light, switch off every motor or appliance the moment it is not needed. Particularly, watch the switches on your electric range.

The situation is critical. Full employment must be maintained and the support of every householder, every commercial user and every industrial consumer is essential in avoiding the waste of electricity.

Chairman,

The Hydro-Electric Power Commission of Ontario.



THE HYDRO - ELECTRIC POWER COMMISSION OF ONTARIO

620 UNIVERSITY AVENUE, TORONTO

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THE FRONT COVER

MANY Commission engineers and other folk who have explored the virgin country along the north shore of Lake Superior in the vicinity of Terrace Bay, will recall seeing Aguasabon Falls where the onrushing waters crowded into a seemingly deep, winding chasm and roared on their way in an almost frightening, frothing fury. These waters have now been harnessed and diverted to provide more much-needed power and today only a comparative trickle of water is to be found at Aguasabon Falls. However, the former grandeur of this setting has been preserved by the photograph featured on this month's front cover entitled "Just A Memory".

Volume 35

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SEPTEMBER - OCTOBER, 1948

In this Issue

Ingles Falls	2
Page Three	3
Out Of Thin Air	4
Tribute To Sir Adam Beck	9
Owen Sound	10
Leeming And Graham	14
Around The Hydro Circuit	15
C.N.E. Pictures	16
Waste Not Want Not	18
Georgian Bay O.M.E.A.	19
Master Mixer	22
Dr. Urquhart's Page	24
Chenaux Development	25
LaCave	27
Hydro Home Forum	28
This And That	29
Lighter Lines	30
Monthly Load Summary	31
Municipal Loads	32



INGLES FALLS, a short distance from Owen Sound, is the locale of this picturesque summer scene, a bit of Nature's artistry to gladden the heart of any artist or photographer.



* Page Three *

EVERYBODY'S RESPONSIBILITY

Robert H. Saunders, C.B.E., K. C., the Chairman of The Hydro-Electric Power Commission of Ontario, has not spared any effort or lost any opportunity to warn all classes of Hydro consumers in recent weeks that it is imperative that men, women and children alike co-operate voluntarily in helping save electricity every day, and twenty-four hours a day, this fall and winter.

In public addresses and in personal letters to many representative organizations, Mr. Saunders has made it clear that every individual who uses power has a responsibility not only to Hydro but to his or her fellow citizens in seeing to it that the present available supply of electricity is not wasted at any time but used to maintain employment at a maximum level.

There can be no half-way measures or temporizing with the problem presented by the shortage of power. Restrictions affecting the use of electricity for certain purposes will not produce the saving required. The all-important saving must be achieved through the voluntary efforts of the people and only an all-out voluntary effort will avert the necessity of cut-offs.

The Commission, naturally, does not wish to be placed in the position of having to take such drastic action. That is why the Chairman and other Commission officials have endeavoured to explain in detail the reasons for the power shortage and the need for saving electricity, particularly during the fall and winter months.

While this is a serious problem it is a temporary one. The Commission is wasting no time in overtaking the backlog of work from the war years when new construction had to be kept to a minimum. The present \$320 million program—the greatest in the history of the Commission—provides for the building of new power plants, transmission lines, distribution lines, rural lines, transformer stations and other facilities. Two new units are already in service and this fall will mark the opening of two new power plants. Progressively, over the next two or three years, over 750,000 kilowatts (1,000,000 hp.) will be added to Hydro's power resources.

By saving power at this time, Hydro consumers will be helping the Commission hasten the day when once again plenty of electricity will be available for factory, office, farm and home—electricity which will make possible the realization of new and even more thrilling contributions to the modern way of life and living.

AUTUMN'S PAGEANT

The cynics who apply the phrase "July and Winter" to the Canadian climate must be singularly unresponsive to autumn's manifest allure. Ladies, beware of them! They are a poor matrimonial bet. Ten to one, they will forsake you in the very heyday of your charms. Let such unveracious detractors betake themselves to the steaming jungles of the Amazon or the burning wastes of the Sahara. The rest of us will not be moving out, this or any other fall. For nobody in his senses would willingly miss the gorgeous pageant that autumn in this country unfolds.

In Ontario, the transition from summer to autumn is rarely abrupt. Usually, there is warm weather, with glorious sunny days continuing well beyond the equinox. True, the evenings grow cooler and we may need a coat or wrap after sundown. But, after the heat of August, this is a welcome change. Most of us have returned from our vacations and are back again at our accustomed tasks, while our children are again at school. For our best efforts, at study or at work, we all need the refreshing sleep that colder nights ensure.

About the end of September, the leaves of the deciduous trees and shrubs undergo a mysterious transformation. The land is a riot of colour. In the north, the gold and yellow of birch and poplar flash and glitter among the sombre spruces; in the south, the scarlet of the maple and the russet of the oak blaze and smoulder against the everlasting green of cedar and pine.

Motoring along Ontario highways is like turning the pages of a picturebook. Farm houses, with their garden patches; the cattle in the pastures; the plowman turning his fall furrows; the lane flanked by yellowing willows along which the fat geese waddle, almost ready for market; even the gas station where you pause to fill up—every view you encounter, under the mellowing sun has something of the character of a genre painting. Even the towns and cities are touched by the wand of the enchanter. Streets and groups of buildings which had hitherto seemed somewhat drab and uninteresting take on a new attractiveness, while normally pleasing prospects are saturated with an atmosphere of glamour and romance.

Autumn is the season of Harvest Home. It is a time of rejoicing for the blessings that Providence has bestowed upon us in the gift of a fruitful earth. This Thanksgiving Day, Canadians will have good reason to be thankful for the harvest has been among the most abundant in recent years.

Out of

by

Harry M. Blake
Hydro News

SERVICES given in increasing measure by The Hydro-Electric Power Commission of Ontario to the rural districts of the province not only help to raise the standard of living on the farms but are of undoubted assistance in improving and speeding up many agricultural processes. Still, important as these services are, especially with regard to the saving of time and labour, in a sense they may be regarded as auxiliary since land can be cultivated, live stock raised and crops harvested without recourse to electrical aids. When it comes, however, to the mass production of the nitrogenous fertilizers which are now used in such vast quantities to enlarge the acreage of productive land and recondition over-worked soils, electricity is indispensable. This is impressively demonstrated by the operations carried out at the plant of North American Cyanamid Limited, located at Niagara Falls, Ontario, and said to be the largest factory of its kind in the world.

The activities at this plant, which may be likened to a gigantic mass-production laboratory, call for a power load of 85,000 kilowatts, or approximately 114,000 horsepower. This is equivalent to more than one-fifth of the rated generating capacity of the Commission's premier generating station at Queenston and to nearly half as much again as the total capacity of the new DeCew Falls generating unit which was brought into service last autumn. Supplied with low-cost electricity on such a scale, North American Cyanamid Limited has been able to initiate developments and carry

out processing improvements of first importance not only to agriculture but to many other industries engaged in various types of production.

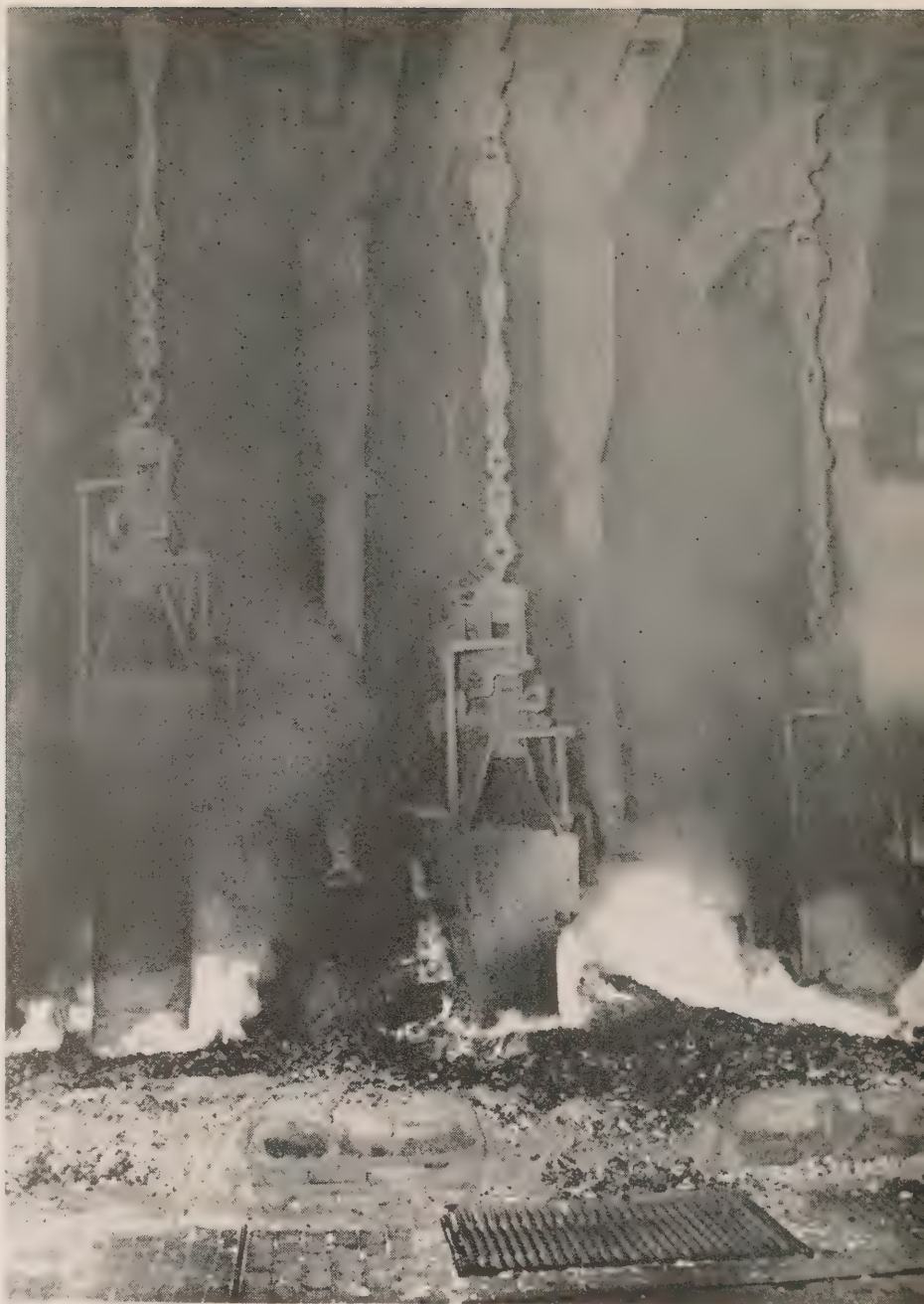
Nitrogen From The Air

For more than a hundred years chemical fertilizers have been used to enrich the earth. For a long time the nitrates obtained from Chile in a readily adaptable form provided the basis for a facile manufacture. With the depletion of the Chilean stocks, it became necessary to discover other large-scale sources of nitrogen or face the gloomy alternative of the food supply not keeping pace with the

increasing population.

It was already well known that the air we breathe is composed of about four-fifths nitrogen and one-fifth oxygen, with traces of other gases. It had also been calculated that the air over one square mile of land contains enough nitrogen to supply the earth's needs for ten years. Nitrogen in the air is, however, inert. The problem was to fix or combine it in a soluble form with other elements so that it could be successfully used as a plant nutrient. Scientists got

(Continued on page 6)

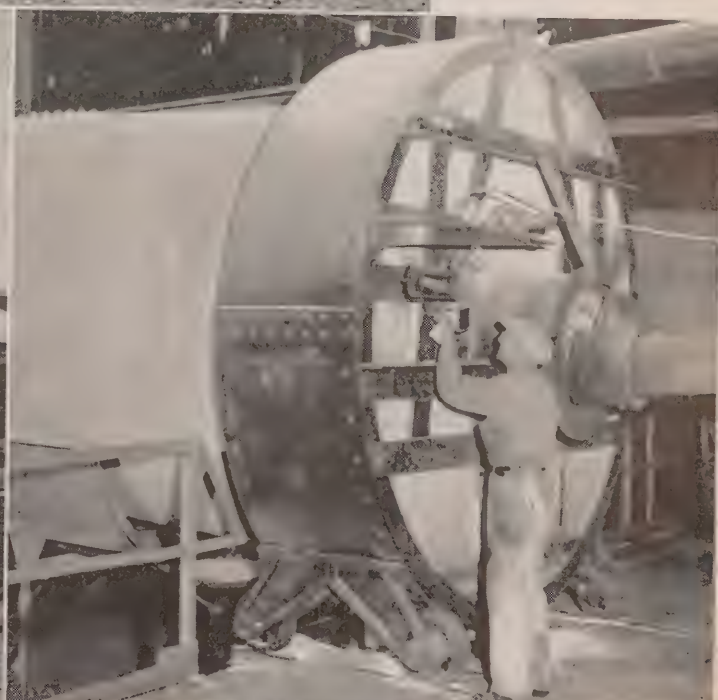
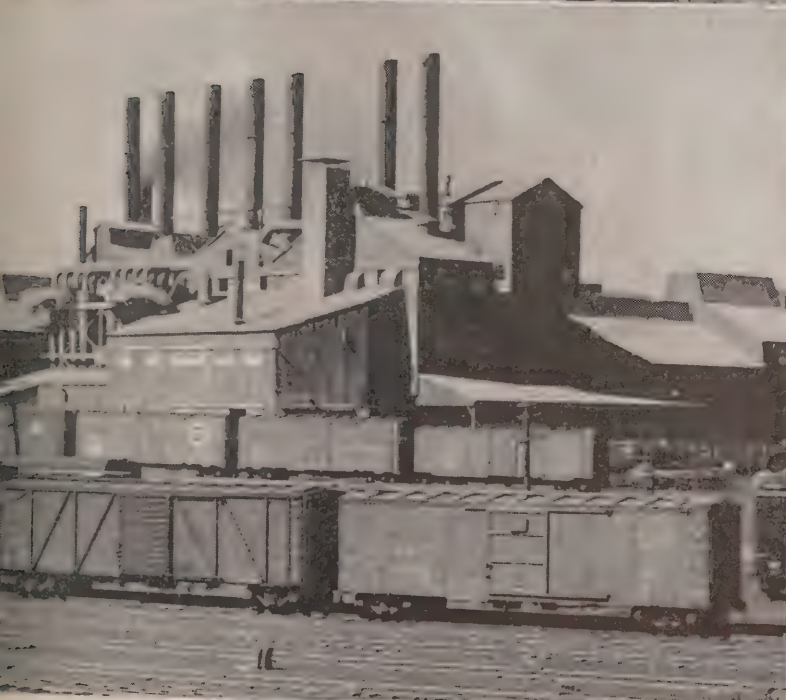


WITH THE heat-resistant screen momentarily removed, Hydro's photographer took this rapid-fire picture at the open top of one of the electric carbide production furnaces in the plant of North American Cyanamid Limited. Calcium carbide, obtained by the fusion of lime and coke at 4,000 degrees Fahrenheit, provides the absorbent for the pure nitrogen distilled from the air.

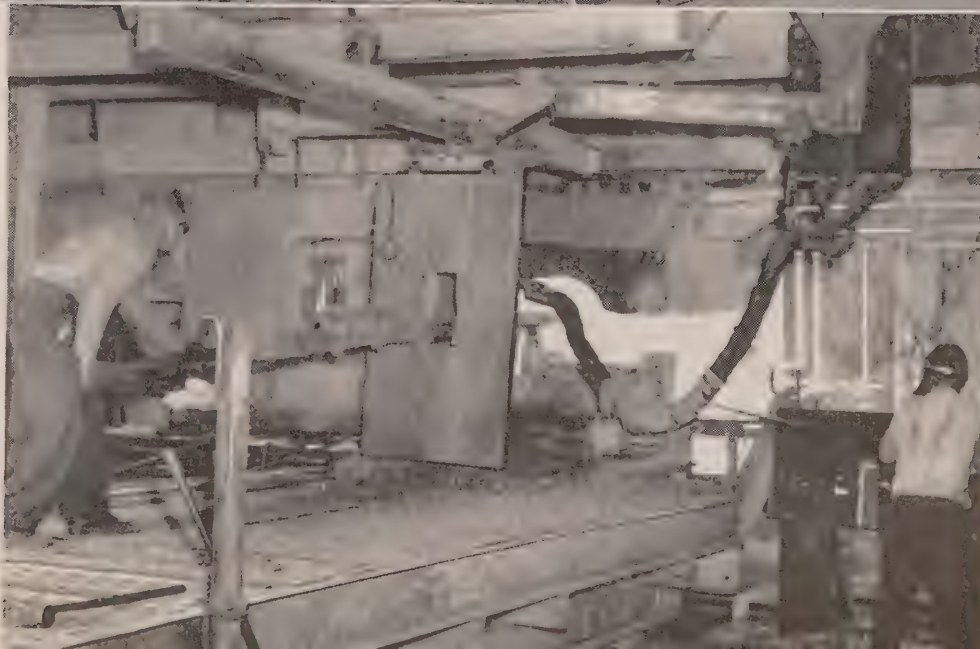
AT THE Beachville quarry near Ingersoll an ideal limestone is obtained for use in the production of calcium carbide and for many other purposes.



RIGHT, BELOW is the end of one of seven revolving kilns — each 125 feet long — where limestone is converted to lime by intense heating with powdered coke.



ABOVE, A section of the Cyanamid plant at Niagara Falls, Ontario. Hydro loads totalling 114,000 horsepower are employed in processing vital products for farm and industry.



AT CARBIDE furnaces frequent boring is necessary with electrodes so that the "melt" may run freely when tapped. Operators are protected by shields and helmets.

OUT OF THIN AIR

(Continued from page 4)

busy.

The fertilizer and soil conditioner known as cyanamid is an adaptable form of the calcium cyanamide which is obtained through the absorption of nitrogen in calcium carbide. The calcium carbide is produced by the fusion of lime and coke in electric furnaces. The nitrogen is extracted from the air by processes of liquefaction and fractional distillation. The first two factories for production along these lines were set up in Europe in 1905—one in Italy and one in Germany. In 1907, the American Cyanamid Company, the parent of the present Canadian organization, entered into a contract for power with the old Ontario Power Company, erected a plant and began production.

Advantages Of Site

The site at Niagara Falls was chosen, of course, because of the availability of low-cost electric power in adequate supply. The decision to establish on the Canadian side was further influenced by the presence of an extensive limestone formation at Beachville in the vicinity of Ingersoll. This "rock" was found to be very high in calcium carbonate and low in silica and magnesia. Analysis showed that it would ideally combine with nitrogen in the production of calcium cyanamide; and it could be quarried economically.

The quarry acquired by the company at Beachville not only provides the limestone out of which calcium carbide is processed at Niagara Falls but may well be regarded as an industry in its own right. The pulverized limestone produced there has a wide sphere of usefulness in both construction and manufacture. This was made apparent when, during a recent visit, through the courtesy of A. J. Kennedy, Superintendent of Quarry Operations, Hydro News was privileged to look over a list of the day's shipments to Ontario firms.

It was gathered that powdered limestone is employed in the manufacture of rubber goods and glassware and in the production of asphalt shingles and sidings. It is used as a filler for asphalt paving and floor linoleums, as a calcium base in the preparation of animal food, and, quite distinct from a fertilizer, as a conditioner for acid soils.

Operations At Quarry

Mining at Beachville has already been carried out over an area of some 28 acres. The rock is quarried to a depth of 70 feet. Blow this depth magnesium intrudes to such an extent as to make heat treatments difficult. According to Mr. Kennedy, there is enough suitable rock "in sight" to feed the electric furnaces at the Niagara Falls plant for another

Work Underway At Windsor Steam Plant



PRELIMINARY TESTS of soil and rock were being conducted when Chairman Robert H. Saunders, C.B.E., K.C., paid a visit recently to the site of Hydro's new \$21,000,000 steam plant at Windsor, Ontario. Shown here discussing the tests are, left to right, Gordon H. Fuller, Windsor Utilities Commission, W. H. Ramsay, H.E.P.C. soil research expert, Mr. Saunders and Jasha Hvilivitsky, consulting engineer.

fifty or sixty years at the present rate of production.

After blasting operations, the broken rock is removed in trains of dump cars and taken to the mill. Here its size is reduced and regulated by passing through crushers and vibrating screens. One-inch and two-inch sizes are sent to the Niagara Falls plant for processing in the calcium carbide furnaces. From 1,000 to 1,200 tons of this dimension are shipped out every day. In a pulverizing mill the smaller rock is reduced to powder form, following a thorough dry-out at 300 degrees Fahrenheit. Apart from the uses to which reference has already been made, it is interesting to note that finer-screen limestone goes into the making of skeets for clay-pigeon shooting.

Hydro power is employed in practically all mill operations. The power comes in at 8,000 volts from the Ingersoll Rural Power Station and is stepped down to operating voltages at the mill. The primary crushers are equipped with 200 horsepower and the secondary with 150 horsepower motors. The pulverizing plant uses 150 and 210 horsepower motors, while the electric pumps, continually at work dewatering the floor of the quarry, range from 75 horsepower to 150 horsepower machines. Altogether there are 127 electric motors in use.

The Plant At Niagara Falls

Painted a navy grey, the cyanamid plant at Niagara Falls, viewed from a distance, not a little resembles a huge

sprawling battleship, which in some unaccountable way has drifted ashore and is now being lightered by hundreds of cars on miles and miles of railway sidings. These cars bear the insignia of every railroad in America—symbolic of the continent-wide distribution of the product.

Initially, the Niagara plant produced only one grade of cyanamid, which was used as a component of mixed fertilizers. In Canada, however, and throughout a large section of the United States, it was found that calcium cyanamid employed alone was often a satisfactory corrective for sour soils, and soon powdered and granular forms were produced for direct application.

Many Uses Found For Product

During the first world war it was discovered that a crude cyanide could be made from calcium cyanamide. Installations for the required processing were set up in 1916 and since then the plant has been producing what is known as Aero Brand Cyanide. This is said to contain 48 to 50 percent equivalent sodium cyanide. It is used for the recovery of gold and silver from their ores and also in the treatment of copper, lead and zinc ores in flotation operations. Crude cyanide can also be employed as an insecticide and fumigant and a modification is of service in the case hardening of steel.

In 1933 a unit was added to the already huge plant for the production of sodium silicate glass. The soda ash is

(Continued on page 8)

THESE ARE the fractionating columns of the liquid air machines for the production of nitrogen. Liquid air is so cold that spots of frost form outside the columns.



RIGHT, BELOW, two minor accident cases are receiving attention from registered nurses. Medical and surgical facilities at the Cyanamid plant are excellent.



ABOVE ARE 5-ton pigs of crude cyanamid which have just been removed from the refractory-lined steel containers where the carbide absorbs the nitrogen.



"LET'S GO!" Baseball park, swimming pool and tennis courts are provided by Cyanamid for the young folk of Niagara Falls, Ontario.

OUT OF THIN AIR

(Continued from page 6)

obtained from Canadian sources while the sand comes from Illinois. The reaction is carried out in two 1,000 horsepower electric resistance furnaces. The furnace product is subsequently hydrated for the production of waterglass, which is used in the preparation of laminated fibre cartons, in the manufacture of soap and wherever this particular type of adhesive is suitable.

Through the kindness of A. O. Williams, Vice-President and Works Manager, Hydro News was able to view many of the processes carried out at the plant and to form a first-hand impression of the highly important role Hydro power plays in this gigantic Ontario industry. The operations were explained by C. T. Houck, Agronomist, who, during the tour, gave every possible assistance both to the writer and the Commission's photographer.

No less than 30 buildings are comprised in the plant. Most of them are of corrugated iron construction, with steel frames. Floor space in the operating areas totals 918,345 square feet.

Limestone Becomes Lime

We first visited the kilns where the limestone from the Beachville quarry is converted into lime—or, to put it more technically, calcium carbonate changed into calcium oxide. There are seven of these kilns. They are cylindrical in shape and each one is 125 feet long and 8 feet in diameter. They are made of steel and lined with fire-brick. Powdered coal, burned in an air blast, maintains a temperature of 2,200 to 2,500 degrees Fahrenheit. Simply stated, the heat is applied at one end and the lime comes out at the other. The kilns revolve slowly under the power supplied by electric motors, and this speed is regulated to a nicety by electrical control equipment.

Power Direct From Queenston

After cooling, the lime is mixed with coke to form the charge for the big electric furnaces where the calcium carbide is produced. The power for these furnaces, as well as for the other electrical equipment in use, comes direct from Hydro's Queenston station at 110,000 volts. It is first stepped down to 12,000 volts and then reduced to lesser voltages for plant distribution.

The company would seem to have a penchant for the lucky number seven. Just as there are seven kilns, so there are seven electric carbide furnaces—only these are not all of the same size. Two take Hydro loads of 25,000 horsepower each; other two, loads of 14,000 horsepower each; and the remaining three, loads of 4,000 horsepower each—adding up to the respectable total of 90,000 horsepower—considerably more than the total capacity

LONDON REMOVING OVERHEAD WIRING

London has removed more overhead wiring from its streets than any other community in Canada, both on an area or per capita basis, according to E. V. Cuchanan, General Manager of London Public Utilities Commission.

More than \$850,000 worth of underground electric cable has been installed in a program which started 25 years ago and is still continuing, he stated.

The local Public Utilities Commission recently authorized the construction of a new underground feeder cable at a cost of \$76,000 to replace a 13,200 volt overhead cable now serving industrial East London.

In 1922 the worst sleet storm in the city's history caused the Utilities' officials to put their high tension wires underground. At that time power was disrupted for days and officials concluded that overhead feeder circuits were too vulnerable. Since that time Hydro poles have disappeared completely from the downtown area, and only a few short stretches of high tension feeder line are still above ground.

of Hydro's new Stewartville generating station.

An Impressive Heat Load

Mr. Houck conducted us to the platform surrounding one of the open-top, vertical-chamber carbide furnaces, which, when built, were the largest of their type in the world. A mixture of lime and coke was being mechanically fed around three huge rectangular electrodes, which provide a fusing temperature of 4,000 degrees Fahrenheit. Bidding us to stand well back out of roasting distance, Mr. Houck had one of the heat-resistant screens which surround the chamber removed for a few moments, and Photographer Helling made what was possibly a world record for quick camera adjustment.

The terrific heat engendered melts the lime to a liquid, which combines with coke, forming calcium carbide and carbon monoxide gas. Up to the present, this gas, which escapes at the top of the furnace, has been allowed to burn freely to carbon dioxide. We were led to understand, however, that steps are now being taken to recover the carbon monoxide so that its heating value can be utilized in other operations at the plant.

Boring And Reaming

Once every half hour or so the molten carbide is tapped from the lower side of the furnace. As the carbide leaves the electric furnace, it has nearly twice the temperature of molten cast iron. It is dazzlingly bright, and the men engaged in the tapping operation wear dark glasses as well as helmets and protective clothing. The carbide is discharged into a travelling conveyor of moving moulds

and is conveyed and cooled continuously in readiness for the crushers and grinders.

In order that the carbide may run freely when the furnace is tapped, it is necessary to keep the outlet well bored out. This operation is effected with a pike-shaped electrode fitted to a long wooden handle. The electrode is passed through an opening in a steel frame which protects the operator in much the same way as the shield on a 25-pounder gun. In addition to the boring, reamings are carried out at more frequent intervals to keep the carbide from massing or solidifying.

Air Surrenders Its Nitrogen

Air is metered into the liquid air plant from three favourable locations. As the air comes in, it is dealt with by seven Claude type liquid air machines—again that lucky number—and is compressed, expanded, "frozen" and variously ill-treated until it attempts to escape further torment by changing into a clear liquid which looks like crystal-clear water. But its persecutors are not deceived. They just warm this liquid slightly to 329 degrees Fahrenheit below zero and it gives up the ghost—pure nitrogen, which comes boiling off in a fit of impotent rage and is led triumphantly away to the fixation ovens.

In these refractory lined steel containers—there are about 600 of them—the milled calcium carbide has already been placed. Now the gaseous nitrogen is added. The reaction is started by inserting a carbon resistance electrode vertically through the centre of the charge. The exothermic reaction progresses gradually throughout the charge, the cycle varying from four to seven days according to the size.

When the absorption process has ended, the crude calcium cyanamide has formed into a solid mass, which may weigh up to five or six tons. This "pig" is now removed, allowed to cool and then crushed in a hammer mill. Further milling reduces the broken-up cyanamid to powder. After further processing, it is ready for packing and shipment in convenient 100-pound bags. Total production of the plant is about 240,000 tons a year.

After all Canadian requirements have been satisfied, the bulk of the cyanamid is exported to the United States. Derivatives are shipped to all parts of the world.

North American Cyanamid Limited employs 1,200 people at its Niagara Falls plant and about 600 at the Welland Chemical Works, a chemical plant which was acquired in 1946 and now produces ammonium nitrate fertilizer, sulphuric acid and other chemicals. The processes carried out at Welland call for an average Hydro power load of 15,000 kilowatts—approximately 20,000 horsepower.

The company has taken a great interest in employee welfare. The cafeteria

(Continued on page 14)

Tribute TO MEMORY OF SIR ADAM BECK

Fitting tribute to the memory and the noteworthy achievements of the late Sir Adam Beck, former Hydro Chairman was paid in Toronto recently upon the occasion of the 23rd anniversary of his death. In attendance were representatives of the Commission, the Toronto Hydro-Electric System, as well as civic and government officials and admirers of the "Father of Hydro." Short addresses were given by Loftus H. Reid, Chairman of the Toronto Hydro-Electric System and T. L. Church, a former Mayor of Toronto. The brief religious service was conducted by Rev. R. Currie Creelman, M.B.E., Chaplain of the Ontario Hydro Legion Branch. Wreaths were placed on the monument by Mr. Saunders, on behalf of the Commission and Mr. Reid on behalf of T.H.E.S., while Controller David Balfour placed the wreath on behalf of the City of Toronto. Others participating in the remembrance service included Controller John Innes, Acting Mayor of Toronto; Dr. Otto Holden, Assistant General Manager—Engineering; E. B. Easson, Secretary of the Commission; George Taylor, President of the Ontario Hydro-Electric Club and members of the Ontario Hydro Legion Branch. Commissioner Bert Merson, General Manager E. M. Ashworth and Acting Secretary M. White also represented the T.H.E.S.

STANDING OUT in bold relief against a brilliant, summer sky, the life-size statue of the late Sir Adam Beck looks down from the top of the monument erected to his memory on University Avenue in Toronto. Here, on Sunday, August 15, a group of men gathered to commemorate another anniversary of his death and to offer short eulogies on behalf of thousands of people across Ontario who now enjoy the benefits of Hydro service largely through his earlier efforts. Among those paying their tribute to the memory of the "Father of Hydro" were, left to right, Rev. R. Currie Creelman, M.B.E., Acting Chaplain of the Ontario Hydro Branch of the Canadian Legion; Loftus H. Reid, Chairman of the Toronto Hydro-Electric System; Controller David Balfour and Controller John Innes, representing the Mayor and the City of Toronto; Robert H. Saunders, C.B.E., K.C., Chairman of the Commission and Dr. Otto Holden, Assistant General Manager—Engineering. The wreaths which were placed on the monument during the memorial service are also shown in this picture.



OWEN SOUND



IT was a British sailor who first recognized the potentialities of a beautiful land-locked harbour on the southern shore of Georgian Bay.

Today the shore on which he stood has become the City of Owen Sound, a vigorous community of over 17,000 with its wide diversity of assets affording it a unique position among Canadian municipalities. When it became affiliated with Hydro on January 12, 1915, its power load was 600 horsepower. The load today is 9,672 horsepower, and the increase is significant of the city's steady progress over the intervening years.

However, a few additional words are in order about that nautical gentleman we referred to above. He was Admiral Sir Edward W. C. R. Owen, Commander-in-Chief of His Majesty's Naval Forces on the Great Lakes. In the period following the war of 1812, Sir Edward was conducting the first hydrographic survey of the Great Lakes. When he first inspected the superb natural harbour facilities on the southern shore of the great Georgian Bay he was duly impressed and described it in glowing terms to government officials. They too, seemed similarly impressed and reciprocated by naming the bay Owen Sound.

The initial settlement on the location of the present city was started in 1840, but bore the name of Sydenham in deference to Lord Sydenham who was the Governor-General. However, in 1851

by
John A. Murphy
Hydro News

the name was changed to Owen Sound, and thereby were Sir Edward and the British Navy vindicated. By 1856 the village had become a town and in 1920 attained status as a full-fledged city.

In addition to furnishing the city with its name, the harbour has played an integral role in its industrial development. In the days of the old "windjammers" on the lakes, the port served as a distributing centre for the district as well as being a link in communication with the Canadian West. Some of these latter functions have never been relinquished. The erection of a grain elevator in 1925 brought Owen Sound into prominence as a grain-handling port. In the interim, facilities have been expanded so that at the present time the bins can handle 30,000 bushels an hour and have storage facilities for 4,000,000 bushels. The large oil companies also use the port as a distributing centre and their tankers are regular visitors to the harbour. Pointing to the annual mean temperature of 43.2, an Owen Sounder will tell you that the harbour is the last one on the Great Lakes to freeze in the winter and the first to respond to the balmy breezes

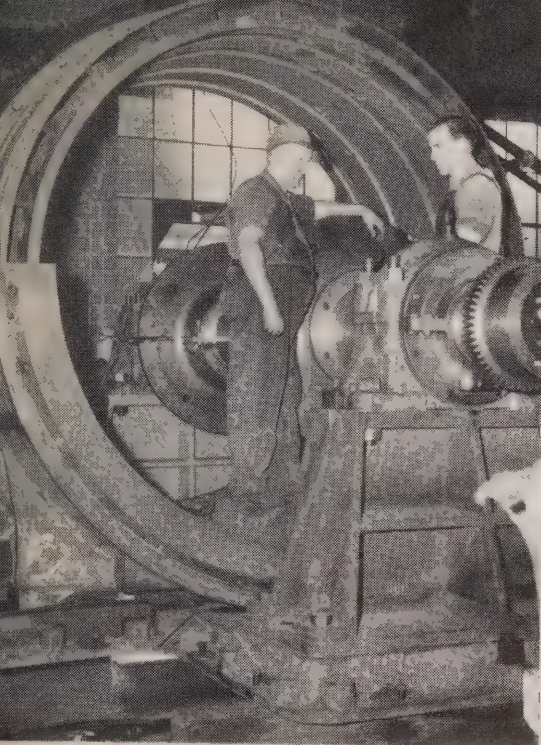
of spring.

But Owen Sound is not content to rest on its laurels as a leading inland shipping centre. As we mentioned previously, industry is there in force and in widely-diversified fields of activity. Here is a partial list of the products manufactured in the city: Steel boats, heavy duty marine engines, steel propellers for light and heavy vessels, hosiery, radio cabinets, fire fighting equipment, furniture, mining equipment, heavy steel castings, stoves, lighting fixtures, leather goods and baskets. We think that proves our point but as a footnote it might be added that Owen Sound ranks high as a shipping centre for livestock. The cattle population of Grey County, we were informed, tops all other counties in the province, and has the additional distinction of being fourth highest in number of hogs.

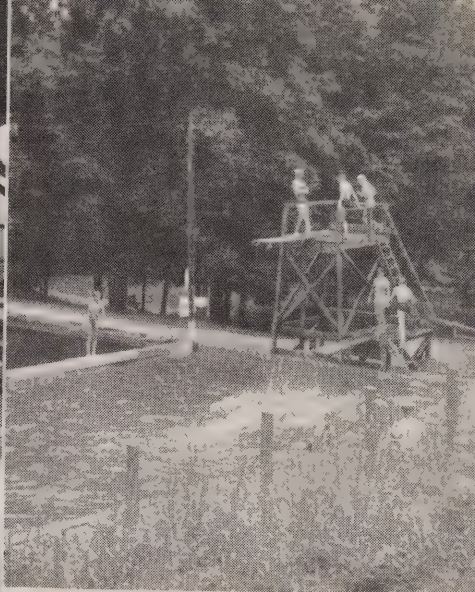
New Station Being Built

From live stock to live wires is a rapid change-over—as well as being a poor attempt at humour—but nevertheless we go on undaunted. In our delving for facts we discovered that the Public Utilities Commission looks after the power demands of 4,185 domestic consumers, 614 commercial and 123 industrial. There is one 9,000 kv-a substation in operation at present, but another is under construction and designed to have an eventual capacity of 6,000 kv-a. Incidentally the

(Continued on page 12)



LEFT—THIS impressive piece of machinery is a pulpwood grinder manufactured by the William Kennedy and Sons Limited for use in the pulp and paper industry. The logs are forced against the grinder stone, centre, by the action of the drum rotating in the opposite direction and swiftly reduced to pulpwood.

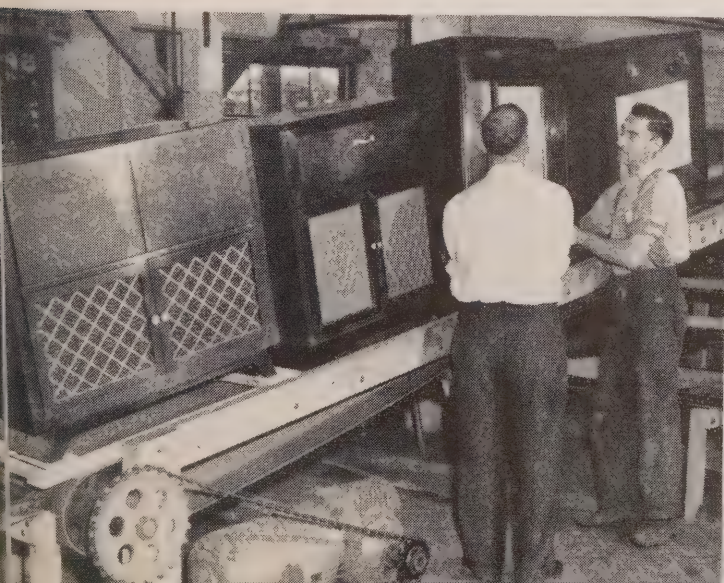


ONE OF the favourite summer retreats of the residents of Owen Sound, young and old alike, is the swimming pool in lovely Harrison Park. During the torrid months of July and August when "the heat is on" in earnest the pool provides a popular and safe substitute for the "Old Swimming Hole".

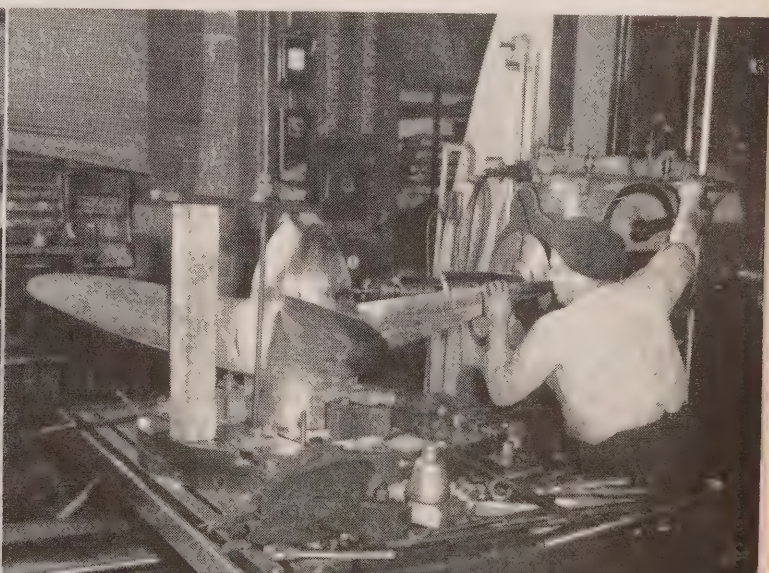


RIGHT—ALMOST ready for the water is this rugged all steel tug, a product of Russel Brothers Limited. The firm specializes in steel boats of all kinds from open fishing boats to 80-foot Diesel tugs. They also manufacture gasoline marine engines and hydraulic steering equipment for all types of craft.

LEFT—AT the R.C.A. Victor plant cabinets are manufactured to house the many different models of radio receivers for which the company is renowned. Here a few of the larger type cabinets are seen coming off the assembly line.



RIGHT—HORIZONTAL boring mill in the shop of the William Kennedy and Sons plant is shown here in operation. The machine is boring one of the large steel propellers which are manufactured by the firm and see service on the Seven Seas.



OWEN SOUND

(Continued from page 10)

local system is free of debt, the last payment having been made in January, 1933. In addition to electricity the P.U.C. also operates the city's water supply.

After furnishing some of the technical data on the Public Utilities Commission suppose we take a glance behind the scenes. Manager and Secretary is Robert Butter, or "Bob" as he is known to his associates. His staff numbers 29 and includes two line crews and four completely-equipped trucks. Chairman of the Commission is A. A. Kennedy, while Mayor E. C. Sargent and W. A. Johnston fill the posts of Commissioners.

Owen Sound is frequently referred to by its citizens as "The Scenic City of Ontario." A drive through the pleasant avenues and about the environs of the city will provide ample support for that contention. There are 250 acres of public parks under the supervision of a Parks Commission, the largest of which, Harrison Park, is a well-known tourist centre. Here, a swimming pool, tennis courts, baseball diamonds and free electric lights and hot water lure the visitor into overstaying his holiday. As if all this were not enough, however, the Parks Commission has even provided a fishing stream whose stock is replenished every year. On the subject of fishing, anyone in Owen Sound will inform you that there are speckled trout, just begging to be caught, in a radius of five miles from the centre of the city.

Picturesque Spot

Another picturesque spot on the outskirts of the city is Ingles Falls. Here the crumbling ruins of an abandoned grist mill on the brink of the falls afford an ideal target for amateur photographers. Another object of the camera addicts' zeal is the three year old brown bear owned by the proprietor of a nearby refreshment stand. Chief talent, in fact we suspect the only talent, in this bouncing bruin's repertoire is a passion for soda pop which she consumes directly from the bottle in a manner illustrated elsewhere in these pages. During the course of taking the picture, the bear, whose name we did not take the trouble to learn, sauntered up to our Hydro News photographer, Ted Johnston, and nudged him in a manner that could or could not have been friendly, however our man showed indomitable courage by calmly staring the beast in the eye until his master led him away. We mean the bear of course.

Athletics occupy a prominent place in the leisure hours of the good burghers of Owen Sound for twelve months of



THIS BRASH bruin is a far cry from the bears of Goldilocks' time. They thought a bowl of porridge was the last word in tempting a tired palate. Our walking automobile rug in the picture above prefers nothing more than a bottle of soda pop—the sweeter the better. Ted Johnston, our Hydro News' Photographer, risked life, limb and camera to get this unique shot at Ingles Falls, near Owen Sound, Ontario.

every year. During the golf season, which some enthusiasts claim lasts from March to November, the local divot diggers have two courses whereon to disport themselves. Since we have already discussed fishing we will proceed to another source of civic pride, the Owen Sound Crescents, who at the time of our visit were well in front of all opposition in the senior section of the Ontario Lacrosse Association. An up-to-date Civic Auditorium provides the site for these classic encounters and during the winter months is home for the various teams entered in the Ontario Hockey Association.

A Meeting With Joe McLinden

One of the high spots of our Owen Sound safari was a meeting with Joseph R. McLinden, who served as Manager of the Public Utilities Commission for 31 years until his retirement in 1946. The story of "Joe" McLinden is practically the story of Hydro in Owen Sound. He joined the staff of the company operating the original steam plant in 1886, as a downy-cheeked land of thirteen. When the system became a part of Hydro in 1915 he was appointed manager. Some of his reminiscences about the early days are absorbing and even a trifle hair-raising.

Perhaps we should not mention this

concluding item but the temptation is too great to resist: One afternoon we were in Mr. Butter's office loudly lamenting the fact that a sudden and violent electrical storm was disrupting our photographic schedule. Suddenly our wails of anguish were stilled by a resounding crash and then the lights went out. Yes, it was a power failure. However, Mr. Butter and his staff sprang into action and in a scant few moments we were assured that power had been restored and all was well. So we went on our way with our faith reaffirmed. All in a day's work for a municipal Hydro staff.

DIES AT PORT ROWAN

Secretary of the Port Rowan Hydro-Electric Commission since 1926, Joseph E. Biddle died recently. In addition to his duties with the Hydro-Electric Commission Mr. Biddle also filled the post of Village Clerk in Port Rowan. He was always an enthusiastic supporter of Hydro and under his capable guidance the Port Rowan Hydro-Electric Commission grew from a small undertaking with 73 consumers and a load of 50.6 horsepower to its present position with 311 consumers and an average load of 156 horsepower.



ABOVE LEFT—No less than 128 years of public service is represented by this smiling quartet from the staff of the Owen Sound Public Utilities Commission. Left to right, Fred Breckenboro, John Davy, William Gunn and Alvin Morrison.



ABOVE RIGHT—A typical day's activity under way in the office of the Public Utilities Commission. Reading from left to right we find Margaret MacNeil, Helen Lynn, Taubyll Gorbet, Norris Hind, Alvin Morrison and Vera McIntosh.

CENTRE—HERE is Mr. Butter's pole climbing brigade in action installing new street lights along one of the city's tree-shaded avenues.



LOWER LEFT—Joe McLinden, Manager of the Public Utilities Commission from its inception in 1915 until his retirement in 1946, was caught by the camera when he dropped in for a chat with his nephew, Alex McLinden, who is superintendent of lines and meters with the Owen Sound P.U.C.

LOWER RIGHT—Pride and joy of the Owen Sound Fire Department is this hose truck which features the latest in fire-fighting devices. Equipment for the truck was manufactured in Owen Sound by the Sterling Machine and Manufacturing Company.



LEEMING AND GRAHAM GIVEN NEW DUTIES

Two important appointments were announced recently by the Commission when Harry H. Leeming was named Frequency Conversion Engineer — Administration, with H. R. D. "Rolly" Graham succeeding him as Manager of Hydro's Northeastern Region. Mr. Leeming's appointment repre-



H. H. Leeming

sents another step in the Commission's plan to convert the 25-cycle frequency of the Southern Ontario System to 60-cycles.

Mr. Leeming, who marked his 30th anniversary with Hydro last May, was born in London, England. He received his early schooling at Rugby and continued his education in Toronto. He returned to England in 1914 with the Canadian Army. On active service for the remainder of the war, he was wounded during the Battle of the Somme in France.

Demobilized in 1918, he came back to Canada where he joined the staff of Hydro's Construction Department. Since that time, Mr. Leeming has held various positions in the Commission's Electrical Engineering Department, including, Draughting; Assistant Engineer, Station Design; Resident Electrical Engineer at Cameron Falls development from 1920 to 1921 and also System Planning Engineer.

His capable service was further recognized last year when he was named Manager of the Northeastern Region. During his tenure, the Regional offices were moved from the Bailey Building in Toronto to their present location in North Bay.

Although interested in gardening and fishing, Mr. Leeming's chief hobby has been painting in oils which has won him considerable distinction in Canadian art circles. He is married and has four sons, and is a member of the Association of Professional Engineers of Ontario; American Institute of Electrical Engineers (Toronto Section) and the Mining Institute of Canada.

His successor, H. R. D. Graham, who has already assumed the post of Manager of the Northeastern Region, is well and favorably known to a large group of Hydro colleagues, having served with the Commission for the past 18 years.

Born in Toronto 40 years ago, Mr. Graham attended Toronto public schools and Oakwood Collegiate Institute. Graduating from the University of Toronto with



H. R. D. Graham

the degree of Bachelor of Applied Science (Mechanical), the new Regional Manager was first appointed Assistant to the District Operating Engineer, Thunder Bay and Patricia Districts, upon joining Hydro in May, 1930. He served in this capacity until December, 1947, when his long record of efficient service culminated in his appointment as Acting Operations Engineer in the Northwestern Region.

In June this year, he was named Special Assistant—Areas in the Northeastern Region relinquishing this post a few weeks later to succeed Mr. Leeming as Manager. This Region, under Mr. Graham, has jurisdiction over an area extending north from Burks Falls to James Bay and west from

OUT OF THIN AIR

(Continued from page 8)

is spacious and immaculate—and the meals compare favourably with those served at first-class hotels. There are always seasonal specialties on the menu and the chef's strawberry short-cake, unfortunately restricted to early summer, has been referred to by prominent visitors, who are accustomed to distinguished cuisines, as the most delicious they have ever tasted.

Medical facilities are excellent. Dr. R. G. Warminton, Physician-in-Charge, showed us through the examination rooms, the surgery and the medical clinic. Services far transcend those accepted as standard for first-aid purposes and are equivalent to those provided in the Hydro hospitals established at the Commission's larger construction camps. Physical examinations both when men enter the company's employ and periodically afterwards are part of the routine, and there is complete surgical equipment for handling all types of accident. There are four graduate nurses employed on full time basis, one of whom is a skilled X-ray and laboratory technician and a second who spends part time visiting employees who are absent due to illness. Company policy is that prevention is better than cure, and efforts are being made by the whole organization this year to beat the plant's enviable safety record for 1947 which was 1,600,000 continuous man hours without a single lost-time accident.

Playground For Local Youngsters

The cyanamid plant is centred in 128 acres of ground and in spite of vast storage yards and railway sidings, there is still considerable space for recreational facilities.

"Niagara Falls people have been pretty good to us," smiled Mr. Williams, the Vice-President, "and we have had to get back at them somehow. So we have laid out a park and built a swimming pool for the young folk. There is no charge, and our only stipulation is that they behave themselves. If you knew Niagara Falls youngsters as well as I do, you would realize that we have had very little trouble in that respect. We provide our own lifeguards, who return in the fall to their jobs at the plant. There are also an 'open-to-all' baseball field and tennis courts."

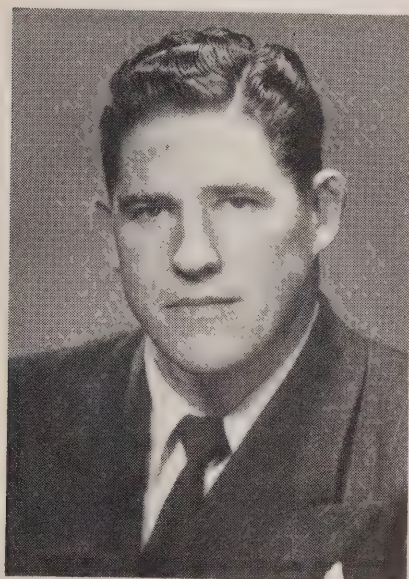
Mattawa to Sault Ste. Marie, including all of Manitoulin Island.

A member of the Association of Professional Engineers of Ontario and North Bay Chamber of Commerce, Mr. Graham primarily enjoys the companionship of his wife and two sons, and is keenly interested in gardening, skating and baseball.



EDWARD CARSON SARGENT

Owen Sound's youthful and athletic chief magistrate, **EDWARD CARSON SARGENT**, was born in Port Dover,



Ontario, on April 15, 1916. He has served as a commissioner with the Public Utilities Commission since he was first elected Mayor in 1947. Educated in Owen Sound, he served in the R.C.A.F. during the war and still is interested in flying.

In addition to his civic duties, Mr. Sargent is active in the Rotary Club, Masons, Oddfellows and Orange Lodge. Also he finds time for a little golf and swimming as well as maintaining a keen interest in hockey, football and boxing. As to the domestic side of this amazing young man, we are informed he is married and the father of two girls.

COL. ALBERT KENNEDY

Chairman of the Owen Sound Public Utilities Commission, **COLONEL ALBERT ARTHUR KENNEDY**, is a member of a prominent Owen Sound family. He was born in Owen Sound on July 25, 1905 and received his primary and secondary education in that city.

During the Second World War. Col.

Kennedy saw service in England, Italy and Northwest Europe. He commanded the Hastings and Prince Edward Regiment



and was awarded the Distinguished Service Order for gallantry in action. Since returning to civilian life, he has remained active in the Reserve Army and commands the 45 Anti-Tank Regiment. For the past three years, Col. Kennedy has served on the Public Utilities Commission. He is married and the father of a son and three daughters.

ROBERT BUTTER

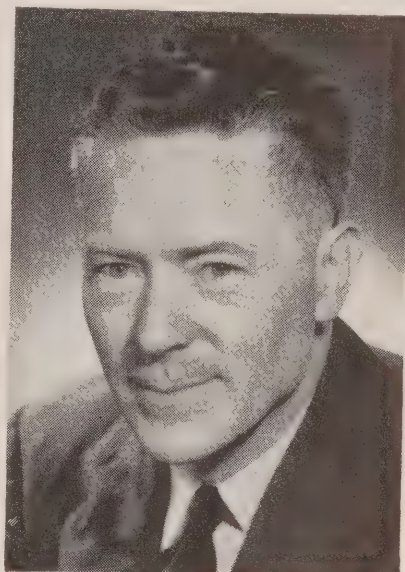
ROBERT BUTTER has been Manager of the Owen Sound Public Utilities Commission since 1946 when he succeeded



the venerable Joe. McLinden. Born at Ancaster, Ontario, he received his earlier

WILLIAM A. JOHNSTON

WILLIAM A. JOHNSTON has been associated with the Public Utilities Commission in Owen Sound, since 1947, when



he first became a commissioner. A native of Essex, Ontario, where he was born on July 24, 1902, Mr. Johnston was educated in Detroit, Michigan and at McGill University in Montreal. In the American city he attended University of Detroit and the Detroit Institute of Technology. He holds degrees in electrical and mechanical engineering and is a member of the Association of Professional Engineers of Ontario. Mr. Johnston is married with one daughter.

education in Hamilton before attending University of Toronto, where he obtained his Bachelor of Applied Science degree. After graduation he joined the Hamilton Hydro-Electric Commission and held the position of Operating Engineer before moving to Owen Sound to assume his present position.

Mr. Butter is married, with a family of two daughters. He is an active Mason and is a member of the Kiwanis Club. For recreation he prefers chasing that white pellet around the fairways, or a spot of fishing.

RIGHT—MAIN entrance to Hydro's impressive exhibit in the Electrical Building that was one selected by the Fair's executive for special mention.



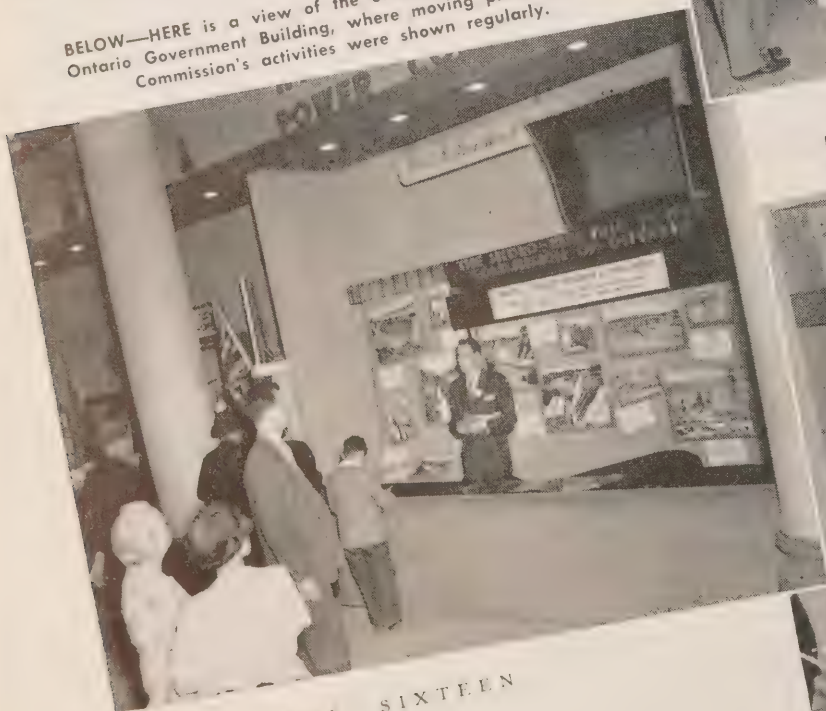
BELOW—CONSERVATION was one of the main themes stressed by the exhibit. At left J. I. Thompson of the Commission staff explains ways to save power to a group of interested spectators.



BELOW—ANOTHER group gathers around a model which shows how water is stored for the generation of power.



BELOW—HERE is a view of the other Hydro exhibit in the Ontario Government Building, where moving pictures of the Commission's activities were shown regularly.



BELOW—THE various steps in the flow of electricity from generating plant to consumer were illustrated in this display.



RIGHT—EARL MOUNTBATTEN of Burma, who officially opened the 1948 C.N.E., addresses the opening day throng from the main Bandshell. Seated in the rear, left to right, are Mayor H. E. McCallum, Lady Mountbatten, The Hon. Ray Lawson, Lieutenant-Governor of Ontario, Mrs. Lawson and Premier George A. Drew.



BELOW—HYDRO NEWS' photographer Burt Helling took this unusual time exposure of the fireworks display that climaxed the nightly grandstand performance.



BELOW—NO pictures of "The Ex" would be complete without one of that well-known rendezvous "The Fountain".

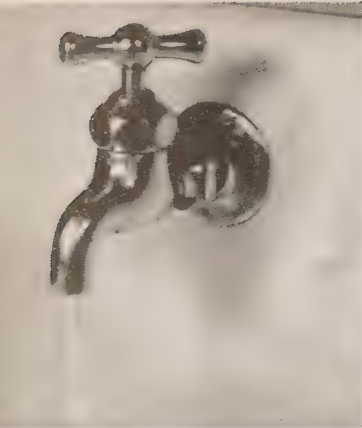


BELOW—ONE of the R.C.A.F.'s new jet fighters set against the backdrop of the new grandstand.



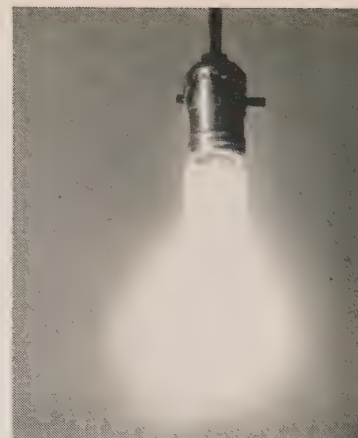
BELOW—GLEAMING new automobiles lured thousands of longing motorists to the Automotive Building.





THIS LEAKING hot water tap, dripping at the rate of one drop a second, will empty a 30-gallon hot water tank three times in two weeks. When these tanks are heated by electricity, faulty taps can contribute to a shortage of power.

WASTE NOT WANT NOT



ONE WAY in which to save power is to switch off all these lamps that are not needed. Why? It takes 645 gallons of precious storage water to keep a 100-watt lamp burning for one hour.

by

John A. Murphy
Hydro News

No one in his right mind would suggest that any Ontario housewife would ever be caught drawing buckets of water from the head pond of a Hydro power development and methodically pouring the contents of the pails on the ground.

Yet the little woman could achieve exactly the same results with infinitely less effort by merely neglecting to disconnect the toaster while she chats on the phone to Mrs. McChinwag about that sale of fur coats downtown. In the fifteen minutes that the ladies devoted to matters of mink and mouton that toaster was wasting its warmth on the kitchen air and in the process depleting the water supply at a Hydro generating station by about a thousand gallons. We exaggerate? Not for a minute. If that toaster happened to be on a circuit supplied from Chats Falls Generating Station on the Ottawa River, about 1,006 gallons of water would go through the turbines to keep those bread crumbs burning.

In the same vein, a single 100-watt lamp, burning for one hour, would use 645 gallons. Nothing to be alarmed about you many surmise, but there are approximately 900,000 Hydro consumers in the province and if each one of them left one of those bulbs burning needlessly for one hour out of 24 the total amount of water wasted would be a prodigious 586,500,000 gallons, or as much water as flows over Niagara Falls in 45 seconds. Reduce that figure to half or one quarter and it still is a staggering quantity of H₂O! If you want to really bring the figure home, take the dimensions of your bathtub. Calculate its cubic capacity, and then work out the number of tubfuls of water re-

quired to generate sufficient power to keep a 100-watt bulb burning for one hour.

In Ontario today we would venture to say there are several electrical appliances in most homes, largely as a result of low-cost Hydro power. In recently-built houses, of course, there are probably more than in older dwellings. We have come to rely on, and take for granted, the services performed by these appliances. Perhaps we also feel a trifle resentful about someone telling us that we should not use them as much as we please. But, there is no one hiding behind the sofa to report you for using extra lights in the living room. If you feel like it you can exercise your "constitutional rights" to the fullest extent. But just hold on for a moment.

Here is a little information on the amount of water used at a generating station when a few of the regular electric appliances in your home are in action. These statistics are based on operating data recorded at the Chats Falls Station. Other generating stations would necessarily have different figures because of the variation in operating head and volume of water available. A standard water heater of 600 watts uses over 600 gallons of water in ten minutes. If that electric tea kettle is allowed to boil for ten minutes longer than necessary, some 1,500 gallon of water are wasted.

However, one of the most effective media for sabotaging the power conservation program is through the intemperate use of your electric range. On the average, range, the top elements and range-oven have a combined total of approximately 8,000 watts. With everything on, the "drawing power," as far as water is concerned, amounts to 50,000 gallons in an hour. But please don't get the idea we are subtly intimating you should go on a diet of raw vegetables; this is only a plea for more careful use of the elements and oven on your electric range. For in-

stance, supposing the head of the house—they still call him that don't they—phones to say he will be a half hour late for dinner. His delayed repast can be kept just as warm in the stored-up heat of the oven rather than letting the top elements do the work.

There are many other ways in which we can cut down on the indiscriminate use of valuable electricity. What we have been attempting to illustrate is the relationship between the casual flick of a light switch and the level of water in storage at a Hydro generating station. The power conservation measures we will be urged to follow are not stringent edicts devised by a group of kill-joys to make life miserable for us. They are carefully thought out plans of skilled engineers whose sole purpose is to ensure the greatest good for the greatest number. Furthermore, adherence to the conservation policies will not cause any one much discomfort. We are asked only to use common sense and eliminate waste—a good guiding maxim whether dealing with electricity or eloquence.

That is why Hydro is asking everyone to co-operate to the utmost in the present drive to conserve electric power. That old chestnut about the chain being as strong as its weakest link still holds true. When the chain has more than 900,000 links the responsibility of each one of us becomes proportionately greater.

NEW SUBSTATION

A new substation at Merivale was recently put into operation when The Hydro-Electric Power Commission of Ontario rearranged incoming lines. Two new 110,000 volt lines now pass through this substation and carry on to Cornwall. The new substation, with an output of 1,500 kilowatts, will shortly be equipped with a rural bank transformer to feed new rural customers.

GEORGIAN BAY MUNICIPAL ELECTRIC ASSOCIATION MEETS AT OWEN SOUND

Co-operation is the key factor in the success of the power conservation program now in effect in Southern Ontario.

This was the dominant note of an address by Robert H. Saunders, C.B.E., K.C., chairman of The Hydro-Electric Power Commission of Ontario, at the Annual Convention of the Georgian Bay Municipal Electric Association held at Owen Sound, September 2nd.

"It is the hope of the Commission," said Mr. Saunders, "that co-operation will eliminate the need for power cuts. There is power to go around if everyone does his part."

To illustrate the precise spirit of public responsibility he was referring to, the speaker cited an incident that occurred during his week's vacation in Bermuda. "I was rather surprised to learn," he said, "that the only fresh water on the island is from rainfall. Everyone stores as much rain water as he can and uses it as sparingly as possible. I was discussing the situation one day in a barber shop and mentioned that it must be a difficult proposition at times. 'Well,' replied the barber, 'it's this way: We may not have as much water as we want, but we have as much as we need.' That principle also applies to the power situation in Ontario."

Great Challenge

"There is a great challenge before all connected with Hydro," Mr. Saunders continued, "not only to the operators but to the owners, the people of this province. Today the Commission is employing 10,000 men in the field, 5,000 on new power developments and 5,000 on other construction such as transmission lines and transformer stations. Our capital expenditures this year to the end of July amount to \$45,000,000."

The Hydro Chairman also made reference to the Commission's rural electrification program. "We have been asked why we should keep adding new consumers when we are already short of power," he said, "our answer is that everyone in this province has a right to his share of Hydro. In this respect I might add there have been 2,600 miles of rural extension so far this year."

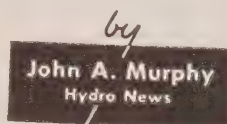
Discussing the progress on the new power developments, Mr. Saunders stated that Stewartville generating station on the Madawaska River would go into service on September 25, and would be followed by the opening of the Aguasabon Plant on the Aguasabon River in October. The later project, it was observed, furnished a fine example of co-operation between a

private company, Long Lac, and a public utility, Hydro. "We stopped the flow of the Aguasabon River several weeks earlier than necessary," stated Mr. Saunders, "in order that the Long Lac Company could make use of the raised water level in the forebay for their logging operations."

Next on the schedule to go into service, he continued, would be Pine Portage on the Nipigon River in 1950, and the great Des Joachims plant on the Ottawa the same year. "If Mr. Hearn and Dr. Holden have their way," Mr. Saunders added, "Des Joachims will be ready six months ahead of schedule."

Excessive Demand Everywhere

Concluding his remarks, Mr. Saunders drew a parallel to the present power shortage and the general business picture. It was pointed out that most business today is faced with a demand beyond its immediate capacity to supply, and Hydro is no exception. "In 1947," he said, "our power load was exactly double what it was in 1937. This year we are being asked to supply 100,000 kilowatts more than last year."



During the general business session held in the afternoon, the delegates were addressed by officials of the H.E.P.C., who outlined the progress being made on new developments and the method in which the conservation program was being presented to the public.

W. Ross Strike, K.C., the Commission's Second Vice-Chairman, told the delegates that all the new power projects were up to schedule, but added "To maintain that schedule the men connected with those developments have worked themselves to a state of near exhaustion." With reference to conservation, Mr. Strike pointed out that the brunt of seasonal shortages is borne by the consumers of interruptible power. "These people are playing ball with Hydro," the meeting was told, "and others should do the same."

"The bulk of saving must come from the industrial consumer," continued Mr. Strike, "and they can cut as much as 20 to 30 percent from their power demands without impairing their efficiency. Many manufacturers have told us that after last winter they found they had cut needless cost from their power bills and intended to keep it that way."

Ottawa Flow Down

Outlining the overall picture of power demand and available supply, A. W. Manby, Assistant General Manager—Administration, stated that last year there was a shortage of 2,500,000 kilowatt hours on week days. Since that time, he went on, there have been no additions to our resources while the flow of the Ottawa River is below that of last year and the Commission had had to accept reduced quotas from the Gatineau Power Company. "This lower water flow plus the reduction from Gatineau," said Mr. Manby, "subtracts 40,000 kilowatts from the 100,000 we will realize from the opening of Stewartville and Aguasabon." The speaker concluded by telling the Convention that the Commission estimated a peak load of 400,000,000 kilowatts hours on week days during the coming winter.

The media to be used in making the public conservation conscious were described by M. J. McHenry, Director of Consumer Services, H.E.P.C. As well as advertising in daily newspapers, appeals were being made by direct mail to industrial organizations, office buildings and service clubs, the gathering was told. In addition, the clergy and principals of public and secondary schools and the Boy Scouts and Girl Guides were being asked to emphasize the paramount importance of saving electricity. "The Chairman himself will speak once a week over the radio," said Mr. McHenry, "and Jim Hunter will also give a talk on conservation on the air every week."

New Officers

The executive of the Georgian Bay M.E.A. elected for the coming year are as follows: President, Walter Dixon Arthur; First Vice-President, W. E. Theaker, Paisley; Second Vice-President, S. R. Sargeant, Orillia; Secretary-Treasurer, H. S. Denef, Hanover; Directors, C. J. Halliday, Chesley, H. G. Robertson, Barrie, A. A. Kennedy, Owen Sound, Joseph Bull, Collingwood, F. W. Kearns, Kincardine and George Patterson, Port McNicoll.

ALBERTA FACES POWER SHORTAGE

Hon. J. A. McKinnon, Federal Resources Minister, said recently in Edmonton that Alberta faces an electric power shortage. New power developments would have to be made, he said, and already Calgary Power Limited had applied to build a large power development project in the Spray Lakes district of Banff National Park.



LEFT—PART of the 1948-49 executive of the Georgian Bay Municipal Electric Association caught by the Hydro News camera. Standing, left to right, C. J. Halliday, Chesley; S. R. Sarjeant, Orillia; Joseph Bull, Collingwood; H. G. Robertson, Barrie. Seated, left to right, G. F. Hutcheson, Huntsville; Walter Dixon of Arthur, President of District Number 2 and H. S. Deneff, Hanover, Secretary-Treasurer.



RIGHT—G. F. HUTCHESON of Huntsville, President of the O.M.E.A., pauses to talk a little shop with Loftus Reid, Chairman of the Toronto Hydro-Electric System who was a visitor at the convention.



LEFT—W. ROSS STRIKE, K.C., Second Vice-Chairman of the H.E.P.C., shown here as he addressed the delegates on the need for co-operation during the power conservation drive.

RIGHT—HERE is shown a general view of the head table at the luncheon held in the Canadian Legion Hall. Guest speaker was Hugh Campbell of Canadian Industries Limited who addressed the gathering on "The Responsibilities of Canadian Citizenship."



THIS INFORMAL get together took place prior to the dinner at which Hydro Chairman, Robert H. Saunders, C.B.E., K.C., was guest speaker. Left to right, M. J. McHenry, Director of Consumer Services; A. W. Manby, Assistant General Manager—Administration; Mayor Eddie Sargent of Owen Sound; W. Ross Strike, K.C., Second Vice-Chairman; Mr. Saunders; G. A. Gillespie, Executive Assistant to the Chairman, and D. G. Ferguson, Georgian Bay Regional Manager.



HERE WE find Al Hamilton of Forest Hill and W. E. Theaker of Paisley, exchanging pleasantries with Garfield Case, M.P.



RIGHT—WE'RE not too certain but we think the quintet at right was rendering "The Old Gray Mare" when officials from the Humane Society broke it up. Left to right—W. Ross Strike, K.C., Walter Dixon, Mr. Saunders and Garfield Case. The unidentified fifth member behind Mr. Case we are forced to leave in blessed anonymity.

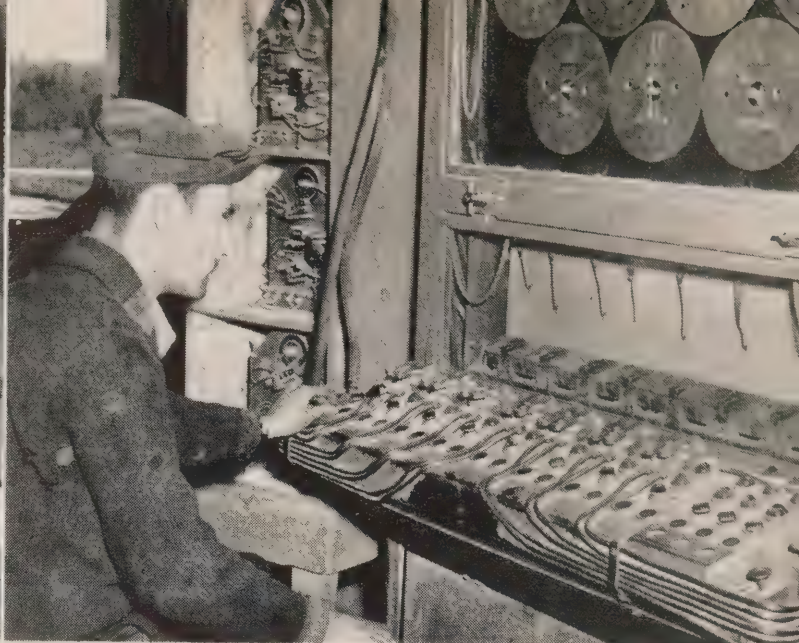


LEFT—THIS general shot was taken during the afternoon session when H.E.P.C. officials discussed the conservation program with the delegates.





CONCRETE DISCHARGING from one of the mixing machines into the hopper which supplies the belt conveyor. Two mixes of concrete were used at Stewartville—a lean mix for the core of the dam and a richer mix for the face of the dam and the powerhouse.



THE CONTROL board is provided with individual dials for aggregates, cement and water. Recorder pens chart the progress of each batch and provide a complete chronographic picture. A counter indicates the total number of batches poured.

MASTER MIXER

High-production concrete mixing plants with automatic control mechanism have been employed in speeding-up construction at Hydro's Stewartville and Aguasabon power developments. It is understood that similar equipment will be installed at the Commission's 358,000 kilowatt (480,000 hp) development at Des Joachims on the Ottawa and at the 120,000 kilowatt (160,000 hp) development at Pine Portage on the Nipigon River.

Concrete is made by mixing sand, gravel, crushed rock and clean water with a cementing material. Portland cement, superseding lime, was introduced in the nineteenth century, and made it possible to produce a concrete suitable for large-scale modern construction purposes. For many years, however, the methods employed in preparing the "new" concrete differed little from those used in preparing the "old." The aggregates were mixed with the Portland cement, just as they had been with the lime, shovel by shovel, and the concrete was conveyed to the pouring locations, generally by wheelbarrow, and shovelled into place. Finally mixing machines were introduced, and on dam and bridge work trucks and conveyor belts were used to convey the concrete to the pouring positions.

When Hydro appeared upon the scene, it immediately began to take a lively interest in concrete and set up a testing and quality control of its own for the aggregates used. Experimental work was conducted unceasingly at the Commission's

laboratories, and it was soon acknowledged that no better concrete for the purpose was made than that which went into Hydro dams and powerhouses.

Big Concreting Program

Hydro's postwar program of water-power development called for the placing of hundreds of thousands of cubic yards of concrete. The Commission was equipped with adequate machinery to turn out the quality of concrete required. It was merely a matter of accelerating production schedules so that new generating stations could be brought into service at the earliest possible moment. With a shortage of manpower, that meant making as many operations as possible automatic.

The improved type of central-mixing plant decided upon provided for (a) fast, accurate, automatic weight batching; (b) automatic compensation for variations in sand and fine gravel moisture content; (c) instantaneous mix changes with a mix selector; (d) interlocking operations to prevent errors; (e) centering of all controls on one control board; (f) complete, detailed records of every batch poured.

Plant At Stewartville

The automatic concrete mixing plant which has been in such successful operation at Stewartville is carried on four steel columns and is housed in timber sheeting as a protection against the weather. The upper part of the plant spreads out into an octagonal steel-plated

shell which provides storage compartments for the materials for each run or batch. The aggregate bins are arranged radially around the central shaft where the cement is stored. In the case of the aggregate, the bins are charged from the stockpiles by an inclined conveyor belt. A bucket elevator takes care of the cement.

When the mechanism has been set for the type and quality of concrete required for a particular job, the operator at the control board turns a switch, and the aggregates, water and cement begin to flow freely down into another set of smaller bins where they are automatically weighed. When the exact proportions required are assembled, the flow from the storage bins is automatically closed off, and the materials descend and come together in a circular collector cone, whence they pass through a motor-driven swivel chute into one or other of the three mixing machines. When the mixing machines have done their job and have poured the concrete into the hoppers, the operations begin all over again, continuing until the entire run has been dealt with.

Any deviations in pattern of the materials which go to make up the batches are recorded by dials at the control board, and by the simple turning of a knob or the pressure of a button, the operator sets ingenious machinery in operation to make the necessary correction.

For distributing the concrete to the

(Continued on page 25)



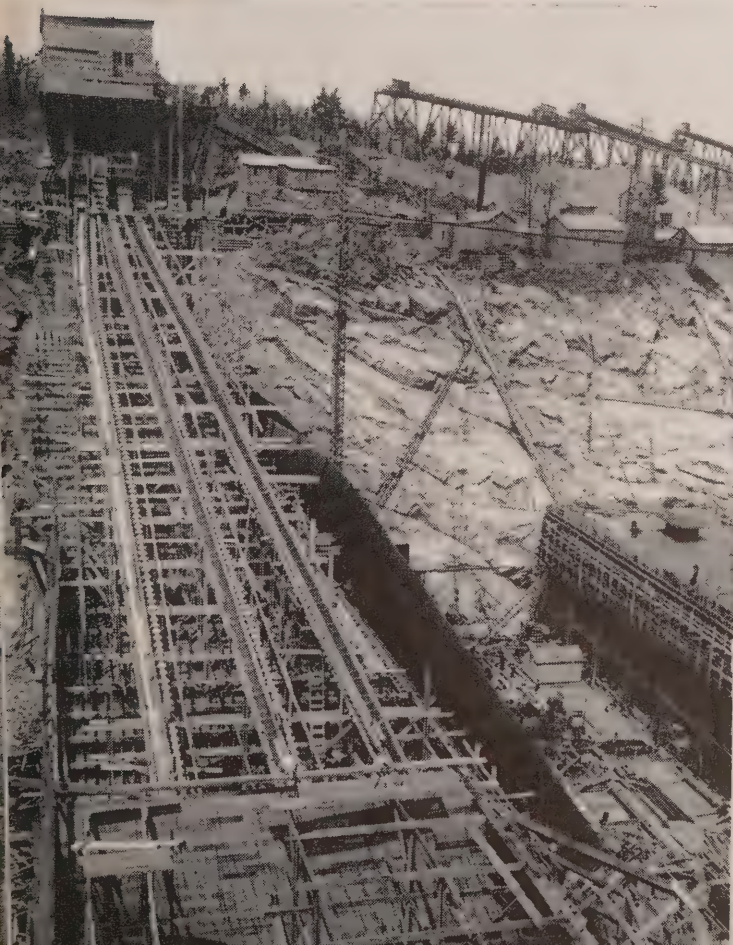
SCREENING PLANT at Stewartville, where the pit-run aggregate is separated into the required sizes. After leaving the crusher, the aggregate passes through scalping screens which remove and return the oversize to the crusher, while acceptable material is passed on immediately to be separated into fine and coarser grades.

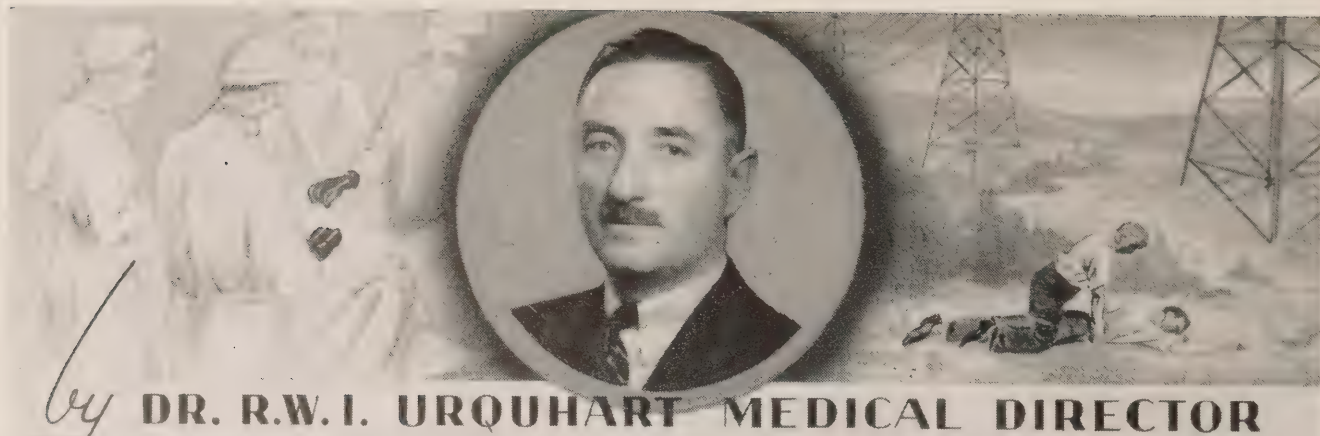
CHUTES ARE in position for placing the concrete in the forms at the north end of the dam. In the background, to the right of the mixing plant, is the conveyor system which brings the aggregate from the stock piles.



ENCLOSED IN a weather-tight timber sheath, the concrete mixing plant is located at the north end of the Stewartville dam.

CONCRETE COMING out from the mixing plant on a conveyor belt. In one run of 22 hours and 35 minutes at Stewartville, 2,832 cubic yards of concrete were produced and placed.





DR. R.W.I. URQUHART MEDICAL DIRECTOR

HEART DISEASE

It has been stated for the United States that if an individual can hold out until he is forty-five he then has a 50-50 chance, statistically, of dying of heart disease. More Americans die of disease of the heart and blood vessels than of any other five causes of death combined. These statements in general are also true for Canada.

While heart disease has always been high on the list of causes of death, it is only within the past few decades that it has reached its present position of importance. In part this has been due to improved diagnosis—the acute indigestion of our forefathers was often really heart disease; in part it is due to the fact that fewer people die of childhood infections and thus more people live to the age at which vascular disease occurs; but mostly it is due to an actual increase in the incidence of the disease.

Why this should be is not fully understood. Heart muscle gets its supply of oxygen and nourishment from two small arteries—the coronaries which wind about the heart. If, for any reason, these arteries become constricted or plugged, then the heart muscle suffers from lack of oxygen, and pain or shortness of breath is the result. This is a heart attack.

Disappears With Rest

If the heart muscle itself is not damaged by this attack, the discomfort disappears with a few minutes' rest. This is the so-called angina or angina pectoris. If, however, any part of the coronary network is plugged completely, the heart muscle beyond the plug becomes permanently damaged. In this case the pain is usually severe and prolonged. Medical help is urgently required. The outcome depends largely on the location of the plug and the amount of heart tissue thus involved.

The constriction of the coronary arteries is due to thickening of the vessel wall. Just why this thickening occurs is still a mystery. It is known that it tends to occur with age and more rapidly in men than in women. Like a pipe in which rust is accumulating the flow through it

gradually decreases and sooner or later the symptoms noted above develop. Doctors are not entirely in agreement, but the majority believe that heredity, nervous tension, worry, high blood pressure and the increased pace of life all play a part in hastening the process.

Many other theories have been advanced to account for this condition, for example the cholesterol theory. This theory suggests that a diet such as is followed by most of us in this country, rich as it is in a fat-like material called cholesterol, tends to overload the blood with this substance and as a result tiny droplets of it are deposited in the walls of the coronary arteries. Thus they become thicker and eventually a point is reached where symptoms are produced.

Low Cholesterol Diet

Some support is given this theory by the fact that coronary disease is rare in those countries in which the usual diet is low in cholesterol. On the other hand many people can eat a cholesterol rich diet for years with no serious arterial change. So far the theory must be regarded only as a theory. There is insufficient evidence to warrant one changing their eating habits.

Whatever the basic cause, the fact remains that the condition is on the increase and it behooves us to consider what can be done to guard against it. It is obvious of course that one can not alter their heredity. Nor can one avoid growing older. One can, however, minimize to some extent the influence of heredity and grow older in a sensible fashion. Much can be done to deal with undue nervous tension and worry and one should be able to control to some extent at least, the pace at which one lives.

Almost every doctor has had patients with this condition who have been largely responsible for their own predicament. For example, Mr. A. was killed by ambition. He wanted to be successful. Perhaps Mrs. A. was partly to blame. She wanted to be the wife of a rich and influential man. So Mr. A. kept his nose to the grindstone. He worked early and late, took his

work home with him. He had two phones on his desk, and between the phones and callers and conferences the day was all too short for all that he wanted to do. He began to feel tired, and thought that he needed relaxation, so he took up golf and bridge, and before long he was working as hard in his off hours at relaxing as he was working in the office during the day. Then he saw his doctor and the doctor told him to slow up, but by this time he was so involved, so many people and things were dependent on him, that he just couldn't see his way clear to cut down. Then he had his attack and the matter was taken out of his hands.

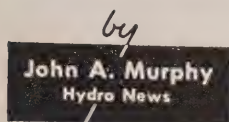
Dropped When Shovelling Snow

Mr. B. was a little different. Mr. B. was only 40 odd and he dropped one day when he was shovelling snow. It was not the snow shovelling that killed Mr. B. It was the riding to work in the morning and home at night and out to lunch at noon. In fact the only exercise he got was walking to the car morning and night. He did not garden or play golf or do any exercise that could not be done sitting down. His muscles were soft and along with them his heart muscle, so when the big snow came it was unable to stand the strain of snow shovelling. Actually Mr. B. sat himself to death. Reasonable regular exercise is a good insurance against heart attacks.

Mr. C. ate himself into the grave. He was 212 pounds and forty-seven years old. Mr. C. was fond of the good things of life and saw no reason why he should not have them. He liked his breakfast, his lunch and especially his dinner and not a little alcohol seemed to add to his enjoyment. At thirty-five he had quite a paunch and at forty-five he had ceased to care about his figure. But all this fat added to the load his arteries and heart were carrying and one day they just gave up. Moderation in eating, as in all other things, is a good rule if longevity is desired.

Your heart deserves some consideration. So do not overwork your heart by undue tension or worry.

CHENAUX DEVELOPMENT



Third phase in the power development of the Ottawa Valley is now under way at Chenaux Rapids, 60 miles upstream from Canada's capital.

Site of this new Hydro development is a portage where three hundred years ago hardy, French Canadian voyageurs, heading down the Ottawa for the fur marts of Montreal and Quebec, would shoulder their canoes and trudge overland rather than risk their cargo of precious skins in the treacherous waters of the seething rapids. On one of these portages, Samuel de Champlain lost his astrolabe, and it remained lost until unearthed by a ploughboy 254 years later. An astrolabe, we are informed, was "an instrument formerly used for taking altitudes". Just what it might be used for today, is not revealed by our source of information. It would seem, however, that the loss of such an item was not too severe a blow to Monsieur de Champlain.

Scheduled for completion by September, 1952, Chenaux will cost approximately \$25,000,000 to build, and will add 119,000 kilowatts (160,000 hp) to the Commission's Southern Ontario System. In conjunction with other developments at Stewartville, Des Joachims and La Cave, it will increase the power output of the Ottawa Valley generating plants by nearly 1,000,000 horsepower by September, 1952.

Construct Camp Buildings

Initial stages of construction on the actual camp buildings at Chenaux began early this year on the Ontario shore, across the river from the small Quebec village of Portage du Fort. Actual site of the dam is approximately 1,000 yards upstream from the Ontario span of the interprovincial bridge, and 100 yards above the Quebec span. Here, wedge-shaped Limerick Island divides the rapids into two channels. The interprovincial boundary lies in the middle of the wider, southern channel, across which the main dam and powerhouse will be constructed. In this manner, with one end of the dam at the Ontario side, and the other on the west side of the island, the finished structure will lie half in Ontario and half in Quebec.

The northern channel, which is completely in Quebec, will be closed by a dam made partly of bulkhead sections and partly of stoplog sluice sections. A

spillway section, comprising sluice gates and stoplog sluice sections, will extend across the low ground of Limerick Island. The discharge from the island sluiceway will flow through an excavated channel and empty into the river at the foot of the island.

Lake One Mile Wide

Four years hence, travellers along the picturesque banks of the Ottawa will see at Chenaux a gleaming mass of concrete stretching 1,400 feet from the Ontario shore and merging with the low, sloping terrain of Limerick Island. Behind this impasse, the rushing waters will be stilled and will broaden into a placid, artificial lake. At its widest point, the lake will be one mile across and will reach back upstream for a distance of eight miles to the village of Bryson, Quebec.

The extensive relocating of highways,

LaCAVE

LaCave Rapids on the Ottawa River, six miles north of Mattawa, is the site of another projected development which, if undertaken, would have an estimated capacity of approximately 180,000 kilowatts (240,000 hp) and could be in operation by September of 1951.

At the time of Hydro News' visit there were approximately fifty men staying at the camp, working on foundation investigation and diamond drilling. There was also a survey camp about three miles away.

LaCave Rapids is considered an ideal site, both from an engineering as well as a pictorial point of view. Although the exact location of the dam and powerhouse has not been decided upon, the choice of sites has been narrowed down to two. If this project is undertaken the dam will be set in a valley extending from the Ontario to the Quebec side and it will probably be about 2,400 feet wide. The water storage area will include acreage on both the Ontario and Quebec sides of the river, necessitating the re-routing of 38 miles of a trunk railway line running from Mattawa to Timiskaming.

The terrain in this picturesque section is very hilly and rocky, and thick brush and trees had to be cut down before a narrow road could be cleared to the point where camps have been established to provide accommodation for the surveyors who have been carrying on the preliminary work.

and in some cases of railways, that was necessary at other Hydro developments such as Stewartville and Des Joachims is one problem not present at Chenaux. The depth of the river channel happily eliminates this contingency. However, it is estimated about 75 farms on the Ontario side and 50 more in Quebec may be affected by the new water level. In only one instance is it likely that a farm house will be in danger of inundation. However, more definite information on this aspect will be available when final contour surveys have been completed.

Meanwhile, work crews are pressing on with the construction of the camp itself. Under the incessant pounding of the carpenter's hammer and the bite of his saw, the buildings that are the nerve centres of the project are taking shape. When completed, the camp will provide living facilities for 1,200 men. The spacious, modern cafeteria will seat 700 and will be equipped with an aluminum-lined cleanery. Bunk houses are partitioned to afford more privacy to the men and also have covered rafters, innovations that hard-bitten old timers would probably scoff at as being "too civilized."

With the completion of the camp, the stage will be set for work to proceed on the development itself. By the end of the summer construction will be in full swing as the army of workmen perform the myriad tasks that transform a Hydro development from plans on a drafting board to an impressive reality of concrete and steel.

MASTER MIXER

(Continued from page 22)

main dam and part of the powerhouse at Stewartville, two 30-inch wide conveyor belts have been used. During the construction operations, these carried the concrete from one batching and mixing plant over the line of the dam on a specially designed steel trestle, consisting of 80-foot span trusses supported on braced steel towers. The conveyors were carried on the top and bottom chords of the trusses and were automatically tripped to discharge the concrete through chutes and "elephant trunks" into the forms.

The capability of automatic mixing plants for high speed production is evidenced by the record set at Stewartville on September 24-25, 1947, when, during 22 hours and 35 minutes of net running time, 2,832 cubic yards of concrete were produced and placed, equivalent to 126 cubic yards per hour. Subsequently, some six-hour runs are said to have averaged 145 cubic yards per hour.

WORK IS now in progress on the Chenaux Development which is located on the Ottawa River, 60 miles upstream from Canada's capital. Scheduled for completion by September, 1952, Chenaux, near the village of Portage du Fort in the Province of Quebec, will add 119,000 kilowatts (160,000 horsepower) to the Commission's Southern System. The photograph below shows the site of the main dam and powerhouse which will extend from the Ontario to the Quebec side. The maximum height of the headworks and powerhouse structure will be 70 feet and will eventually comprise eight units, of which six will be initially installed.



LOOKING UPSTREAM on the Quebec side of the Portage du Fort channel, this illustration shows the approximate location of the third dam which will incorporate stoplog sluiceways.



JUST STARTING out to take stream flow meter readings to determine the relation of the Portage du Fort channel flow to total river flow. In compliance with Hydro safety regulations, the technicians are wearing their "Mae Wests".

LOWER LEFT: At the time this shot was taken about 200 men were engaged in erecting camp buildings. When completed the office building shown here will house some of the engineering staff.

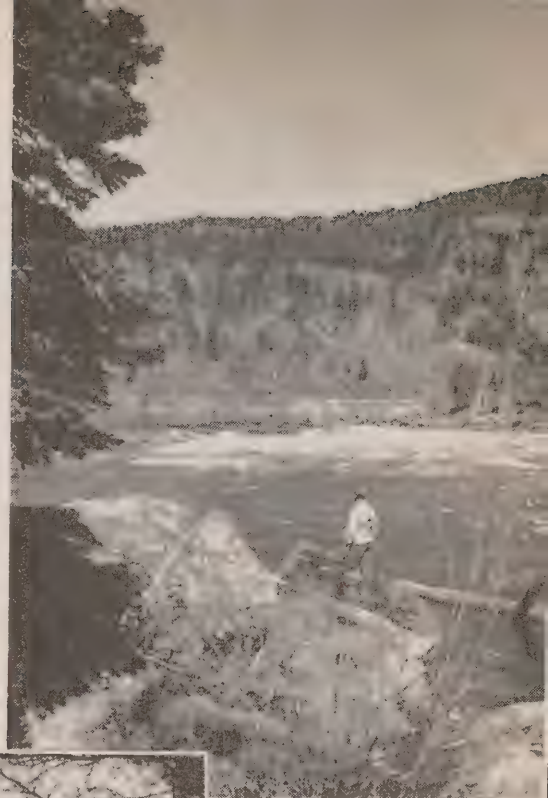


THIS PICTURE shows some of the bunkhouses which, in all, will eventually house about 1,200 men. At this camp there is also a modern cafeteria with a seating capacity of 700 and equipped with an aluminum-lined cleanery.

LA CAVE



LaCAVE RAPIDS on the Ottawa River, six miles north of Mattawa, is the site of another projected development which, if undertaken, would have an estimated capacity of approximately 180,000 kilowatts (240,000 horsepower) and could be in operation by September, 1951. The lower picture shows where the main dam and powerhouse may be located.



LOOKING DOWNSTREAM (above) at the Rapids, these boys were busily engaged in surveying the very hilly and rocky terrain.

DIAMOND DRILLING is a very important part of the initial operations at any development and these men literally hacked their way through thick brush and trees to find a suitable spot.



CONSIDERED TO be an ideal site both from an engineering as well as a pictorial point of view, the above illustration was taken looking upstream at LaCave Rapids.

AT THE time this lower picture was taken, about fifty men were staying at the camp working on foundation investigation and diamond drilling.





Hydro

HOME FORUM

by Edith Emma Muir

HOME ECONOMIST

Save Electricity. Use a flashlight going through a hall with a high ceiling fixture in which there is a high wattage lamp. When exploring clothes closet or basement take the flashlight. You can save electricity on these trips.

Candles for the dinner table are now a necessity in order to save electricity. Be sure that any non-essential electric switches have been turned off before the members of the family sit down to their meals.

Come Sunday and everyone expects something extra special for dinner. We don't hold out for chicken every weekend, but we surely like it for this Sunday in September. Roast in the preheated electric oven at 325 degrees, allowing 18 minutes per pound.

Plate Meals. The one plate meal with everything on it is a life saver during the summer. The plates can be filled in the kitchen, carried to the porch or to the dining room. There's a minimum of dishes used.

An economical dessert. Just a corn starch pudding but dressed up for flavour with strong coffee and orange rind, and for appearance by chilling in a fancy mould.

If your family are pie-faces, serve blue-berry when they are not wearing their Sunday-best clothes. The first apricot pie can be baked a day ahead of time and not turn out to be soggy. We use a pinch of sugar in the pastry and then the pastry tastes good if it becomes soft.

And just to help the fruit pies along, here is a handy pie-mix to have on hand. Store it in the electric refrigerator and add water as required. This is the jiffy mix: sift together 6½ cups of measured pastry flour, 2 tsps. salt, ¼ tsp. baking powder and ½ tsp. sugar. Cut in 2 cups shortening, leaving shortening about size of a pea. Store in two covered glass jars. To make one 9-inch shell, measure 1-1/3

PUMPKIN CHIFFON PIE

- 1½ cup sugar
- 1¼ cups pumpkin, cooked
- ¾ cup milk
- 1½ teaspoon salt
- 1½ teaspoon ginger
- 1½ teaspoon nutmeg
- 1½ teaspoon cinnamon
- 3 egg yolks
- 1 tablespoon gelatine
- 1¼ cup cold water
- 3 egg whites
- Baked pie shell
- Whipped cream

Put ½ cup sugar, pumpkin, milk and seasonings in top part of double boiler. Heat and add to egg yolks, slightly beaten. Return to double boiler and cook until thick. Soak gelatine in cold water and add to thickened pumpkin mixture. Mix thoroughly and cool. When mixture begins to thicken, beat egg whites until stiff, beat in remaining sugar and fold into pumpkin mixture. Pour into graham cracker or plain baked pie shell and serve garnished with whipped cream.

cups mix, sprinkle about 2½ tablespoons cold water and toss with a fork. Pat dough into a ball, then roll in a semi-circular motion.

Colourful green acorn squashes taste best when baked with pork sausage patties in their middles. To prepare, cut squash in halves lengthwise and remove the seeds. Turn face down in pan and bake 40 minutes in moderate oven. Then turn up with a lifter and continue baking until both are done.

How did grapefruit get its name? In southeastern Asia or the Malay Island this fruit grew like a huge cluster of grapes and it was named by a sea merchant who saw them there. Grapefruit has only been an important food in Canada since 1912.

Fruit preserves make tempting sandwich fillings: cottage cheese combined with peach preserves; spread on slice of

boiled ham; chopped nuts mixed with plum jelly; sliced chicken spread with currant jelly and a double decker sandwich made with crabapple and mint jelly fillings.

Household hints: another use for the worn bed sheet is cushion covers, using the original hem. Tint them with dye to match colour scheme.

If fabric is scorched while ironing, remove the scorch stain immediately with diluted peroxide, that is if material is a dark colour. Use a piece of cut onion to absorb the scorch stain on linen.

Here is a pressing hint to try on velveteen or corduroy fabric. Since the pressing is done on the wrong side, turn the garment inside out and place two thicknesses of bath towel on the ironing board for a soft padding. Dampen the corduroy or velveteen slightly and use a warm iron on the wrong side. Remember to lift iron—no sliding. This holds true for steam iron operation too.

Let the children eat the black gum drops—pick these out before you make a gumdrops cake. Dredge with part of the flour in recipe as you would fruit to prevent candies sinking to bottom of cake.

The British fondness for drinking tea, at any old time, in every conceivable place, is invading this country. We too feel comforted by a nice "cuppa". In spite of other preferences we admit that a small amount of milk (and milk not cream) in tea is a score for better nutrition.

Salad centerpieces are just the thing to make a table colourful and attractive. Besides the centerpiece is good eating. Arrange in a low bowl or on a tray, orange carrot sticks, green cucumber wheels, radish roses, tiny tomatoes, green onions and lettuce leaves. They will be very much appreciated if perched on crushed ice.

#his and #hat

During a recent inspection tour of one of the new Hydro developments, top-flight officials were accompanied by a well-known and highly-respected engineer of the Construction Department. The party had descended into the dewatered river bed to view a completed section of the main dam from its base. And now their next move was to proceed to the top of the structure. A ladder-way led up the sloping reverse of the dam. There was no danger attached to the ascent, but it was 200 feet to the top and the climb called for a good heart, good wind and good legs.

When jobs are running smoothly, a certain amount of good-natured chaff and banter is inevitable among men closely associated in a common enterprise. Some time before, the leader of the party, pleased with the progress made at the development, had made a jocular pass at the engineer who was now conducting the party.

"You're getting old, Herman."

Of course, you never let anybody get away with a remark like that. And now it was Herman's chance to get back at his detractor. He suspected that the latter, although a younger man, was in nothing like as good physical condition as himself. Yet he would have to climb the ladder to reach the top of the dam. What a sweet revenge it would be as the "Chief" pulled his tortured frame over the last rung of the ladder to turn to him with the greeting:—

"Let me help you, sir. You know you're not as young as you used to be."

Herman grinned at the prospect, and every other thought and recollection faded from his mind. He raced up the ladder like a sailor swarming the ratlines.

At the top, he paused, panting, to look down. The party had disappeared—and there was nobody coming up the ladder. He turned around. The smile of victory faded from his face. They were all standing behind him! And how smugly cool and collected they looked—especially the "chief."

"We came up on *your* passenger elevator, Herman," purred the latter. Remember, you told us you thought it would be in service—when, we went over the blue prints on the train."

It happened on Yonge Street in Toronto on a sunny Saturday afternoon. The young couple left the restaurant and sauntered casually down the street, he talking with considerable animation, she giving every pretense of listening attentively. Suddenly she slackened her steps, a peculiar far-away look creeping over her features. Her escort paused and looked about for the possible cause of her unorthodox behaviour. His eyes swept in every direction then followed those of the young damsel which were staring horrified at her feet. There in a neat little heap about her shoe tops was a rainbow-hued taffeta petticoat. With an air of admirable sang-froid she stepped daintily out of the wayward garment, picked it up, and folded it neatly under her arm, and without so much as a glance at her awe-stricken young man, resumed her stroll down the avenue.

* * *

During the past few months, considerable interest has been focused on the proposal to harness the St. Lawrence River for power purposes, but only passing reference has been made to the important International Joint Commission, which, by treaty, has the power to give final approval to plans for the development and grant permission to proceed with the project.

What is the function of this International Joint Commission?

This Commission is a unique body which has been in existence since 1909. It was created by a treaty between Great Britain and United States, primarily as a tribunal for the final settlement of all questions involving the use of boundary waters between Canada and United States, as well as waters flowing from boundary waters, or across the boundary. Granted very broad powers to deal with any question arising between the two countries, the Joint Commission comprises six members, three appointed from Canada and three from United States. There are two chairmen, each fulfilling his function when the Commission sits in his own country. During the many years the Commission has been operating, it has succeeded in settling several vexatious problems on an amicable basis to the apparent satisfaction of the parties con-

cerned, and is regarded as a model body for conducting dealings of an international character.

* * *

At this point we would like to pay our tribute to the many Fall Fairs which are in full swing as we go to press. Practically every city, town and village in Ontario—as well as the rest of Canada—has its own exhibition, whether big or small.

It is said that the Fall Fair had its origin during the pioneer days in Canada, when the early settlers, proud of their crops and livestock, gathered together in a spirit of friendly rivalry to prove that their produce was the best in the vicinity. Not to be outdone, their womenfolk took the opportunity to display their cakes, preserves and fancy work to all who evinced an interest.

And so the Fall Fairs were born. They have been growing "bigger and better" with every passing year. Few people realize the painstaking effort and preparation entailed in holding one of these fairs. But, it is an established fact that both young and old get a "kick" out of visiting them to look over the various exhibits which not only afford entertainment, but serve a valuable educational purpose as well.

Since the first fair was held, many innovations have been introduced. It might be wise to remember, however, that the Canadian Fall Fair is still primarily an agricultural competition and, as such, serves to emphasize the fact that this nation holds a pre-eminent position as one of "the granaries of the world."

* * *

Electricity has many uses in the modern world! In fact its manifold applications have almost reached the point of infinity. For instance, the other day we learned that "black light" has been used in a new test for egg freshness. Research engineers at an electrical manufacturing company in New Jersey, U.S.A., have found that old eggs give off a purple glow when they are examined under the invisible ultraviolet rays of "black light." Fresh eggs under the same telling rays appear red. These engineers now claim that retailers can use these ultraviolet rays to determine quickly and without cracking any shells whether or not their eggs are fresh.

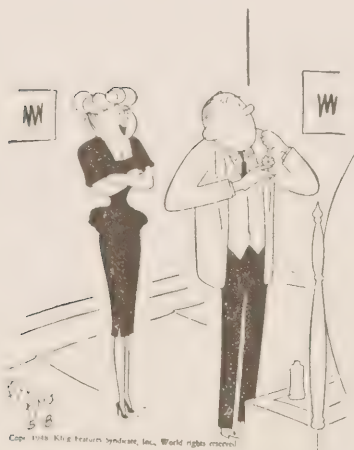
Lighter Lines



"Jimmy forgot my birthday present, Mother—does he get to come in?"

A man gazed into the unfathomable depths of the limpid eyes of the lovely blonde sitting close to him. Acute anxiety was expressed in every line of her innocent face. Every now and then a sigh seemed to rend her being with its intensity, and she looked into his face as though she would read his very soul. They remained like this for several minutes. Neither spoke, but each gazed intently into the other's eyes.

"Yes," said the oculist at last; "one eye is seriously affected, and if not treated immediately, may develop a decided squint."



"You always put a flower in your buttonhole to go bowling?"

Visitor: "Well my little man, what is your name?"

First Boy: "Jule, Sir."

Visitor: "You should say Julius." Then turning to another boy: "Well, my little fellow and what is your name?"

Second Boy: "Billious, Sir?"

A lady asked a sailor why a ship was called "she." The son of Neptune replied that it was "because the rigging cost more than the hull."

A lady's maid told her mistress that she once swallowed several pins.

"Good heavens!" said the mistress, "didn't they kill you?"

Bridget and Mike had been married barely three months and already Mike had on two occasions arrived home in the early hours of the morning. This did not suit Bridget, as on each occasion she had to come down to admit him.

Mike was looking forward to spending the evening of this particular day in having a "few sociable ones with the boys," and this Bridget knew.

"Now look here," she said to her husband at the breakfast table, "it was 2 o'clock the following morning when ye came home the other night a bit since. It was 2 o'clock the following morning when ye came home last night. But I want to be tellin' ye that if it is 2 o'clock in the morning when ye come home tonight—or any other night in the morning—you'll have to get up and let yourself in!"

The Buyer: "You said this was a splendid car on hills."

The Seller: "Man, it will go down hill as fast as cars costing twice as much."

When love and skill work together, expect a masterpiece.—John Ruskin.

Our doubts are traitors and make us lose the good we oft might win by fearing to attempt.—Shakespeare.

Silence is a true friend who never betrays.



"This road hasn't been used for years."

"Don't you feel better since you gave up smoking?"

"No, I'm bothered to death trying to find out what has become of the money I was going to save."

It is with narrow-souled people as with narrow-necked bottles—the less they have in them, the more noise they make in pouring it out.

Purpose is what gives life a meaning.



"I think I'll be a business man. Judging from the way my homework stumps the old man, ya don't have to know a thing."

New Hydro Station Near Sudbury Will Link Important Power Lines

Designed primarily to augment transmission of 60- and 25-cycle power to Sudbury and the surrounding area, a new \$3,000,000 frequency changer and transformer station is now under construction, four and three-quarter miles northeast of Sudbury, Robert H. Saunders, C.B.E., K.C., Chairman of The Hydro-Electric Power Commission of Ontario, announced recently.

Strategically located, adjacent to the Falconbridge highway, the new Hydro installation—to be known as Sudbury Frequency Changer and Transformer Station—is scheduled for completion by the fall of 1949, he stated.

At this point, during the next few months, facilities will be installed to adapt power for both 25- and 60-cycle networks within the Sudbury system as well as other systems in the Nipissing, Temiskaming and Abitibi districts. A significant feature of the new station will be the installation of a frequency changer unit which will have a capacity of 25,000 kilowatts or approximately 33,330 horsepower.

In making the announcement, Mr. Saunders pointed out that all classes of consumers in Sudbury and the surrounding district, use 60-cycle power, except heavy industry in the immediate vicinity, which operates on a 25-cycle frequency. Power for the 60-cycle consumers is supplied by various plants in Northeastern Ontario, while the 25-cycle power is transmitted to the Sudbury area from the Commission's Abitibi Canyon Generating Station.

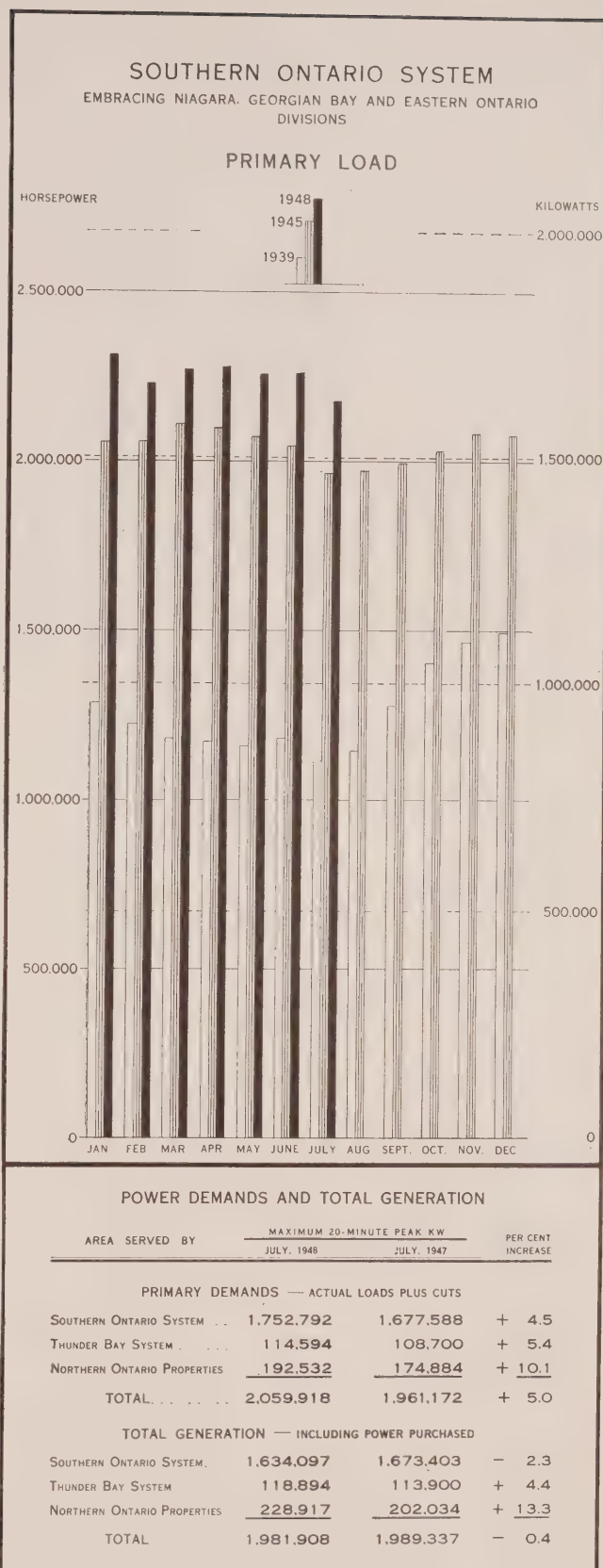
All existing high tension transmission lines in the area, carrying power of both frequencies, will be linked with the new station when it comes into operation next fall. By following this procedure, the Commission will be able to convert power to either frequency, as day-to-day demands dictate. At the same time, this station will be equipped to transform or step down power of both frequencies to the proper voltage before being transmitted to the various distribution points in the area, the Chairman stated.

When Hydro's new Tunnel Development, on the Mississagi River north of Thessalon, is placed in operation late in 1949 or early in 1950, the additional 60-cycle power from this generating plant will also be fed into the Sudbury Frequency Changer and Transformer Station over approximately 125 miles of new, 110,000-volt transmission lines. These new lines will be built by the Commission at an estimated cost of approximately \$2,100,000. The Tunnel Development, which will add 42,000 kilowatts (56,500 hp.) to Hydro's present resources, when placed in operation, is being built to meet increased demands for power in the Sudbury-Nipissing, Temiskaming and Abitibi districts, it was pointed out.

Additional power will also be made available to Sudbury and district consumers through the new frequency changer and transformer station, when future Ottawa River generating plants—now in the planning stage—come into operation, Mr. Saunders added. In this connection, the Commission, in its plans for the Sudbury station, is making provision for increasing the capacity of the plant when it becomes necessary.

"The facilities to be installed at this new station emphasize the vitally important part it will play in the distribution of power in this part of the province where industrial and commercial expansion has created an almost insatiable demand for electricity," Mr. Saunders declared.

Work on the project as a whole is being expedited by Hydro in order to bring the facilities of this station into full play as soon as possible, Mr. Saunders pointed out. Approximately 125 men are now employed on excavation work for foundations of some of the buildings and other ancillary equipment.



MUNICIPAL LOADS, JUNE, 1948

SOUTHERN ONTARIO SYSTEM

NIAGARA DIVISION
(25-Cycle)

	H.P.	Domes- tic Con- sumers		H.P.	Domes- tic Con- sumers		H.P.	Domes- tic Con- sumers
Acton	2,450	620	Erieau	309	234	Palmerston	747	433
Agincourt	288	184	Erie Beach	41	94	Paris	2,640	1,240
Ailsa Craig	207	164	Essex	738	608	Parkhill	374	358
Alvinston	165	230	Etobicoke	15,416	8,484	Petrolia	1,105	860
Amherstburg	1,627	813	Exeter	1,173	611	Plattsville	321	126
Ancaster Twp.	515	431	Fergus	2,071	790	Point Edward	2,360	392
Arkona	112	133	Fonthill	325	340	Port Colborne	2,059	1,762
Aurora	2,179	861	Forest	792	552	Port Credit	1,263	711
Aylmer	1,581	830	Forest Hill	7,851	3,993	Port Dalhousie	1,455	758
Ayr	449	243	Galt	14,750	4,622	Port Dover	787	875
Baden	357	171	Georgetown	3,214	873	Port Rowan	145	420
Beachville	863	173	Glencoe	286	231	Port Stanley	1,269	948
Beamsville	736	453	Goderich	2,644	1,473	Preston	5,108	1,817
Belle River	347	368	Granton	94	90	Princeton	227	105
Blenheim	784	620	Grimsby	1,112	711	Queenston	196	85
Blyth	221	197	Guelph	16,305	6,156	Richmond Hill	768	485
Bolton	337	207	Hagersville	1,463	449	Ridgetown	736	648
Bothwell	180	204	Hamilton	185,378	45,670	Riverside	1,813	1,860
Brampton	4,512	1,784	Harriston	766	398	Rockwood	226	189
Brantford	28,525	9,089	Harrow	772	381	Rodney	220	290
Brantford Twp.	2,657	2,098	Hensall	365	233	St. Catharines	32,793	9,406
Bridgeport	314	212	Hespeler	3,970	892	St. Clair Beach	158	129
Brigden	170	135	Highgate	99	112	St. George	238	185
Brussels	353	273	Humberstone	757	811	St. Jacobs	462	142
Burford	461	260	Ingersoll	4,252	1,940	St. Marys	2,199	1,169
Burgessville	116	63	Jarvis	237	166	St. Thomas	10,371	4,920
Burlington	2,268	1,416	Kingsville	773	692	Sarnia	13,820	5,880
Burlington Beach	712	732	Kitchener	35,531	9,660	Scarborough Twp.	8,053	7,837
Caledonia	517	480	Lambeth	176	160	Seaforth	1,294	576
Campbellville	90	60	LaSalle	484	334	Smithville	516	196
Cayuga	291	200	Leamington	2,545	1,922	Simcoe	3,321	1,803
Chatham	9,885	945	Listowel	2,109	900	Springfield	116	121
Chippawa	452	413	London	50,709	21,930	Stamford Twp.	4,378	2,942
Clifford	166	141	London Twp.	571	547	Stoney Creek	457	289
Clinton	1,184	640	Long Branch	2,846	1,848	Stouffville	685	458
Comber	185	139	Lucan	296	207	Stratford	9,876	4,777
Cottam	125	149	Lynden	174	108	Strathroy	2,061	890
Courtright	75	107	Markham	553	380	Streetsville	773	227
Dashwood	170	112	Merlin	119	140	Sutton	613	502
Delaware	129	78	Merritton	11,269	1,037	Swansea	3,501	2,190
Delhi	705	704	Milton	2,082	623	Tavistock	879	316
Dorchester	137	158	Milverton	600	286	Tecumseh	656	794
Drayton	163	180	Mimico	3,461	2,478	Thamesford	384	160
Dresden	768	536	Mitchell	1,339	568	Thamesville	314	273
Drumbo	162	100	Moorefield	95	79	Thedford	195	185
Dublin	86	66	Mount Brydges	150	181	Thorndale	171	88
Dundas	3,209	1,600	Newbury	67	90	Thorold	3,698	1,471
Dunnville	1,890	1,142	New Hamburg	1,026	412	Tilbury	1,101	632
Dutton	288	244	Newmarket	2,883	1,215	Tillsonburg	2,291	1,343
East York Twp.	13,291	13,355	New Toronto	12,743	2,202	Toronto	426,675	156,033
Elmira	2,155	644	Niagara Falls	13,848	5,367	Toronto Twp.	6,296	3,914
Elora	806	374	Niagara-on-the-Lake	1,152	696	Wallaceburg	6,955	1,710
Embro	252	139	North York Twp.	16,064	9,611	Wardsville	86	75
			Norwich	633	419	Waterdown	380	291
			Oil Springs	198	117	Waterford	608	448
			Otterville	175	174	Waterloo	8,321	2,586
						Watford	579	324

MUNICIPAL LOADS, JUNE, 1948

	H.P.	Domes- tic Con- sumers		H.P.	Domes- tic Con- sumers		H.P.	Domes- tic Con- sumers
Welland	1,280	3,330	Neustadt	110	136	Iroquois	440	337
Wellesley	234	149	Orangeville	1,215	803	Kemptville	632	425
West Lorne	677	265	Owen Sound	9,654	4,185	Kingston	24,104	8,962
Weston	6,410	1,815	Paisley	260	227	Lakefield	662	432
Wheatley	368	263	Penetanguishene	1,577	910	Lanark	188	198
Windsor	62,503	27,603	Port Carling	421	211	Lancaster	70	133
Woodbridge	1,171	345	Port Elgin	828	590	Lindsay	5,085	2,405
Woodstock	11,121	3,704	Port McNicoll	157	261	Madoc	430	347
Wyoming	195	185	Port Perry	529	420	Marmora	246	279
York Twp.	25,749	23,837	Priceville	25	48	Martintown	89	68
Zurich	202	168	Ripley	136	135	Maxville	193	196
(66⅔-Cycle)			Rosseau	79	71	Millbrook	209	200
Bronte	205	244	Shelburne	425	337	Morrisburg	776	465
Oakville	3,135	1,285	Southampton	846	644	Napanee	2,254	979
Trafalgar Twp.	972	661	Stayner	469	333	Newcastle	336	159
			Sunderland	237	163	Norwood	289	247
GEORGIAN BAY DIVISION			Tara	209	175	Omeme	288	198
(60-Cycle)			Teeswater	288	245	Orono	152	199
Alliston	738	478	Thornbury	177	278	Oshawa	23,693	7,374
Arthur	290	272	Thornton	48	71	Ottawa	44,325	16,317
Bala	372	336	Tottenham	111	173	Perth	2,440	1,200
Barrie	6,657	2,787	Uxbridge	606	478	Peterborough	24,648	8,283
Beaverton	449	365	Victoria Harbour	156	297	Picton	2,100	1,254
Beeton	169	159	Walkerton	1,459	801	Port Hope	4,283	1,590
Bradford	597	322	Waubaushe	217	260	Prescott	1,796	851
Brechin	83	66	Warton	630	506	Renfrew	1,209	1,501
Cannington	497	279	Windermere	124	74	Richmond	135	105
Chatsworth	154	123	Wingham	1,306	643	Russell	156	129
Chesley	927	490	Woodville	179	129	Smiths Falls	4,834	2,360
Coldwater	249	164				Stirling	510	305
Collingwood	3,530	1,759	EASTERN ONTARIO DIVISION			Trenton	7,972	2,037
Cookstown	176	138	(60-Cycle)			Tweed	559	366
Creemore	258	194	Alexandria	581	510	Warkworth	119	162
Dundalk	346	232	Almonte	652	718	Wellington	556	370
Durham	731	499	Apple Hill	59	78	Westport	162	174
Elmvale	312	210	Arnprior	2,086	993	Whitby	2,007	1,163
Elmwood	135	89	Athens	178	220	Williamsburg	121	96
Flesherton	160	145	Bath	80	83	Winchester	686	316
Grand Valley	290	202	Belleville	11,334	4,142			
Gravenhurst	1,767	780	Bloomfield	257	192	THUNDER BAY SYSTEM		
Hanover	2,144	944	Bobcaygeon	316	425	(60-Cycle)		
Holstein	40	68	Bowmanville	4,054	1,247	Fort William	18,424	8,379
Huntsville	1,805	813	Braeside	276	100	Nipigon Twp.	497	329
Kincardine	1,196	810	Brighton	721	614	Port Arthur	24,791	7,257
Kirkfield	40	41	Brockville	9,916	3,339			
Lucknow	530	340	Cardinal	556	408	NORTHERN ONTARIO		
MacTier	163	128	Carleton Place	2,796	1,173	PROPERTIES		
Markdale	312	238	Chesterville	672	273	Nipissing District		
Meaford	1,315	831	Cobden	243	198	(60-Cycle)		
Midland	4,463	1,826	Cobourg	3,584	1,545	North Bay	7,265	3,809
Mildmay	254	211	Colborne	365	299	Patricia District		
Mount Forest	957	538	Deseronto	407	428	(60-Cycle)		
			Finch	196	134	Sioux Lookout	476	613
			Frankford	322	262	Sudbury District		
			Hastings	230	284	(60-Cycle)		
			Havelock	259	316	Capreol	561	463
						Sudbury	13,531	9,122



FLANKED BY a majestic row of hills, the mighty Ottawa River sweeps through a picturesque valley, depicted in this photograph near the site of another projected Hydro development known as LaCave Rapids. Situated six miles west of Mattawa, the development it is estimated, would generate at least 180,000 kilowatts (240,000 hp).

HYDRO *News*





ONE of the many power-saving methods devised for the housewife is shown here. A complete meal, meat, vegetables, and dessert, can be cooked in the oven, eliminating use of top elements.

Save Electricity!

Turn off all lights and electrical equipment
—when not in use



RADIO STATION CHUM'S program director, Larry Mann, presents a \$25 cheque to Miss Helen Shaw of the Station's accounting department, which won the first monthly power conservation contest.

"ONE LIGHT at a time, please sir," says Bellboy Joe Coverley of Toronto's Royal York Hotel, as he explains to incoming guests the hotel's conservation policy. Other reminders are cards, posters and messages in hotel publications.

CANDLELIGHT DINNERS are featured by many Ontario restaurants and hotels as part of their power-saving program. Below, a waiter adds a touch of glamour to dinner at the Old Mill, Toronto. Efforts such as this help conserve power for industrial expansion.





THE HYDRO - ELECTRIC POWER COMMISSION OF ONTARIO

620 UNIVERSITY AVENUE, TORONTO

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FRONT COVER

THIS month's cover photograph, taken by Jack Horrell of the Commission staff, seems to symbolize the spirit of "The True North, Strong and Free."

Mr. Horrell got this fine picture below the Falls on the Aguasabon River, not far from the Commission's new Aguasabon development which was placed in service recently. This plant, located about four miles from Schreiber on the north shore of Lake Superior, serves not only the adjacent and newly constructed LongLac Pulp and Paper Company's mill, but will augment the supply of power to the Commission's Thunder Bay System.

Volume 35

Number 11

NOVEMBER, 1948

In this Issue

	Page
Aguasabon Surge Tank	2
Page Three	3
Polymer Power Delivered	4
Aguasabon Plant Opened	9
On The Records (A.M.E.U.)	13
Hydro Home Forum	14
District No. 3 O.M.E.A.	15
Stewartville	19
District No. 6 O.M.E.A.	23
Eastern Ontario Convention	25
Power Conservation Appeal	27
A Visit To Queenston	28
Phyllis Foreman Honoured	30
Plowing Match	31
Primary Load Chart	33





From a photographic standpoint one of the most striking features of Hydro's new Aguasabon Generating Station is this 240-foot steel surge tank located on a hill overlooking the powerhouse.

A SIGNIFICANT EVENT

AN event which is indicative of the way in which Hydro is meeting the challenge of present-day conditions and one which is of marked significance in the history of Hydro in Ontario was chronicled on November 1 when the Commission took delivery of 22,500 kilowatts (30,000 hp.) of steam-generated power from Polymer Corporation at Sarnia.

The fact that much of this 60-cycle power is now being fed at 25 cycles into the Southern Ontario System bears testimony to the fine co-operation between both Hydro and Polymer engineers. The undertaking included the construction of a new transformer station at Sarnia and of a new frequency changer and transformer station at Westminster near London. That these two projects were completed within twenty months is, in itself, a noteworthy achievement. Then, there was also the construction of a new 68-mile transmission line linking the two stations.

On this important occasion, Commission Chairman Robert H. Saunders made an interesting and noteworthy observation when he stated that the present power supply situation in relation to the phenomenal industrial expansion of Ontario pointed to the need for steam-generated power to supplement Hydro-Electric power.

The Chairman's observation, in effect, crystallized the amazing transition that has taken place in this province since the inception of Hydro. It points up clearly a fact which, while apparently obvious, is sometimes overlooked—that low-cost Hydro power has paced the industrial growth of Ontario.

In this connection, it will be remembered that under the pressing impetus of war, industry in this province expanded to a point where more than half of the war materials and equipment supplied by Canada were made in Ontario and in this achievement Hydro played a pre-eminent role. Since the war that expansion has accelerated following an almost overnight transition to peacetime production, and Hydro is now faced with power demands that continue to pyramid.

Nature, however, is the villain of the piece in the present power shortage drama. Despite the increasing demands for more and more power, the supply problem could have been handled in a way which would have caused the minimum of inconvenience

to the people of Ontario had there been a normal supply of rain in the right places. By the right places, of course, engineers mean the areas which provide the spring and fall run-offs that replenish the storage waters required to maintain the flow of rivers on which many power plants are located.

In visualizing this picture and remembering the vagaries of Nature, which can be cruel as well as kind, one can readily recognize the important contribution steam-generated power can make in supplementing Hydro-Electric power and in maintaining a supply which will be adequate to meet all emergencies.

In the light of these facts, the delivery of steam-generated power from Polymer marks a new and significant era in Hydro history.

MISS FOREMAN HONOURED

ELECTION of Phyllis L. Foreman, B.L.S., librarian of The Hydro-Electric Power Commission of Ontario, to the Senate of the University of Toronto focuses attention upon the important contribution which is being made to the public life of Ontario and Canada by Commission employees outside the sphere of their regular duties.

Over a long period of years Hydro's prestige has been greatly enhanced not only by the pre-eminent position it occupies in the electrical supply field but by the contributions to scientific progress made by individual members of its own staff. These people, in most cases, are members of Canadian and international engineering, scientific and other associations and they are called upon to prepare special papers on a wide range of subjects.

The honour conferred upon Miss Foreman serves to accentuate the distinction many Commission people have attained in their respective fields. It is of interest to note, too, that Miss Foreman is a graduate of Victoria College and of the University of Toronto's Library School. Since becoming identified with the Commission in 1941, the Hydro library, under her direction, has been developed to the point where it is recognized as one of the finest specialized technical libraries on the North American Continent.

Her Commission colleagues and many friends in college halls and among the alumni will unite in extending congratulations to Miss Foreman. As a member of the Senate of her Alma Mater she will find still wider scope for useful service to the people of Ontario.

Steam-Generated Power from Polymer Now Feeding Southern Ontario System

By Charles G. W. MacIntosh,
Hydro News

Present-day power supply conditions in relation to the phenomenal industrial expansion taking place in Ontario point to the need for constructing steam plants which can provide power on a 24-hour basis regardless of the idiosyncracies of nature.

This observation was made by Hydro Commission Chairman Robert H. Saunders at Sarnia on November 1 during the official ceremony marking the delivery of 22,500 kilowatts (30,000 hp.) of steam generated power to Hydro by the Polymer Corporation.

Important Moment Arrives

The colourful ceremony was held in the cafeteria of the Sarnia company. An impressive-looking sign showing two steel towers and a figurative power line with electric current pulsating through it began flashing when the important moment in the opening ceremonies arrived—the pressing of the power button.

With the simultaneous pressure of their forefingers, E. J. Brunning, President of Polymer Corporation, and Chairman Saunders symbolically sent the steam-generated electric power from Polymer surging into Hydro's Southern Ontario System. This ceremony was witnessed by more than 200 industrial, Hydro and municipal dignitaries. Included in the group were J. W. Murphy, M.P., West Lambton; Brian L. Cathcart, M.L.A., West Lambton; Mayor W. C. Nelson, Sarnia; Reeve Gordon Forbes, Sarnia township; Richard L.

Hearn, General Manager and Chief Engineer, H.E.P.C.; G. R. Henderson, Chief Engineer, Polymer Corporation, and many others.

The official opening at Polymer Corporation's cafeteria preceded an inspection at Hydro's new Westminster Frequency Changer and Transformer Station near London. There, the 60-cycle current from Polymer is converted into 25-cycle current and relayed into Hydro's Southern Ontario System.

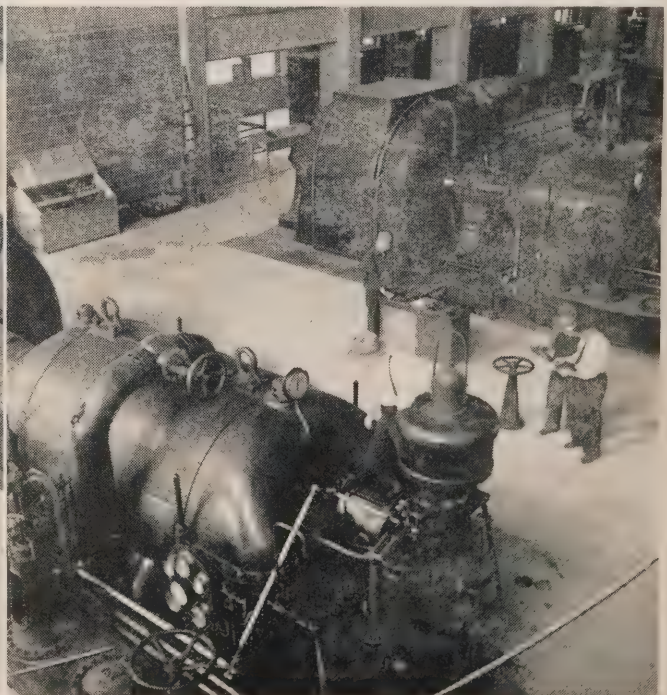
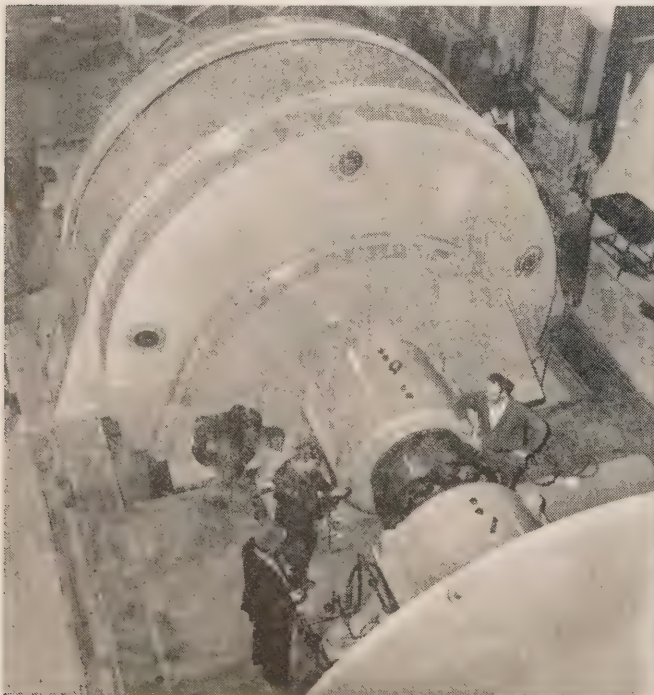
Hailed As Epoch

The event at Polymer was declared an epoch by J. R. Nicholson, Executive Vice President of the Polymer Corporation, who was introduced by Chairman Saunders. Mr. Nicholson spoke on behalf of Hon. C. D. Howe, Minister of Trade and Commerce, who was unable to fly to Sarnia for the opening ceremonies because of fog conditions prevailing over most of the province.

In contrast to the rest of Ontario, the day broke clear and bright at Sarnia for

(Continued on page 6)

Delivery Is Marked By Colourful Ceremony At Sarnia And Inspection Of New Frequency Changer And Transformer Station At Westminster — Climaxes Four Years Of Planning, Hard Work And Co-operation — Present-Day Conditions Point To Need for Steam Plants, Chairman Saunders States



LEFT—ONE of the three 25,000 kv.a. frequency changer units at the new Westminster Frequency Changer and Transformer Station near London gets a final once-over. This unit is now being used to convert power from the Polymer steam plant (right), from 60 to 25 cycles. This power is then fed into the Commission's Southern Ontario System.



ENGAGED IN discussion following a tour of the Polymer plant are (left), from left to right, Bryan L. Cathcart, M.P.P., West Lambton; Commission Chairman Robert H. Saunders, E. J. Brunning, President of the Polymer Corporation; H. J. Mero, Windsor, Director of Polymer; and J. W. Murphy, M.P., West Lambton.

A LARGE gathering of visitors attended the ceremonies at Polymer, including this group (right), flashed by the Hydro News' photographer in front of the Polymer cafeteria. They are, from left to right, C. Ramey, J. R. Thompson, C. H. Elliott, D. M. Stai, J. E. Stark and O. P. McNally.



INSPECTING THE panel board at Hydro's Sarnia Transformer Station are (left), from left to right, P. E. Battram, H. B. Thompson, S. W. Rosebrugh and R. H. Atkins with D. E. Grantham, operator at the station, extreme right. Harry Beatty, relief operator, is at the telephone.

IN THIS picture, gazing at the bus bars at Hydro's new Transformer Station at Sarnia are, from left to right, E. R. McCay, Kingsville; V. Hamacher, Parkhill; D. Gribbon, Watford; and Donald Waters, Parkhill.



POLYMER POWER

(Continued from page 4)

the official opening. It was perfect weather for an important function, and it seemed to those present that this was a good omen that the all-out efforts of the Commission to break through the power shortage difficulties would be rewarded by success in the future.

His face reflecting the pleasure he apparently experienced that another milestone had been passed along the difficult road in solving Ontario's power problems, Chairman Saunders, presiding officer at

the ceremonies at the Polymer Corporation plant, gave the large audience some interesting information on power conditions throughout the province.

The Chairman emphasized the point that if normal water conditions prevailed now, Hydro would be able to take care of normal demands.

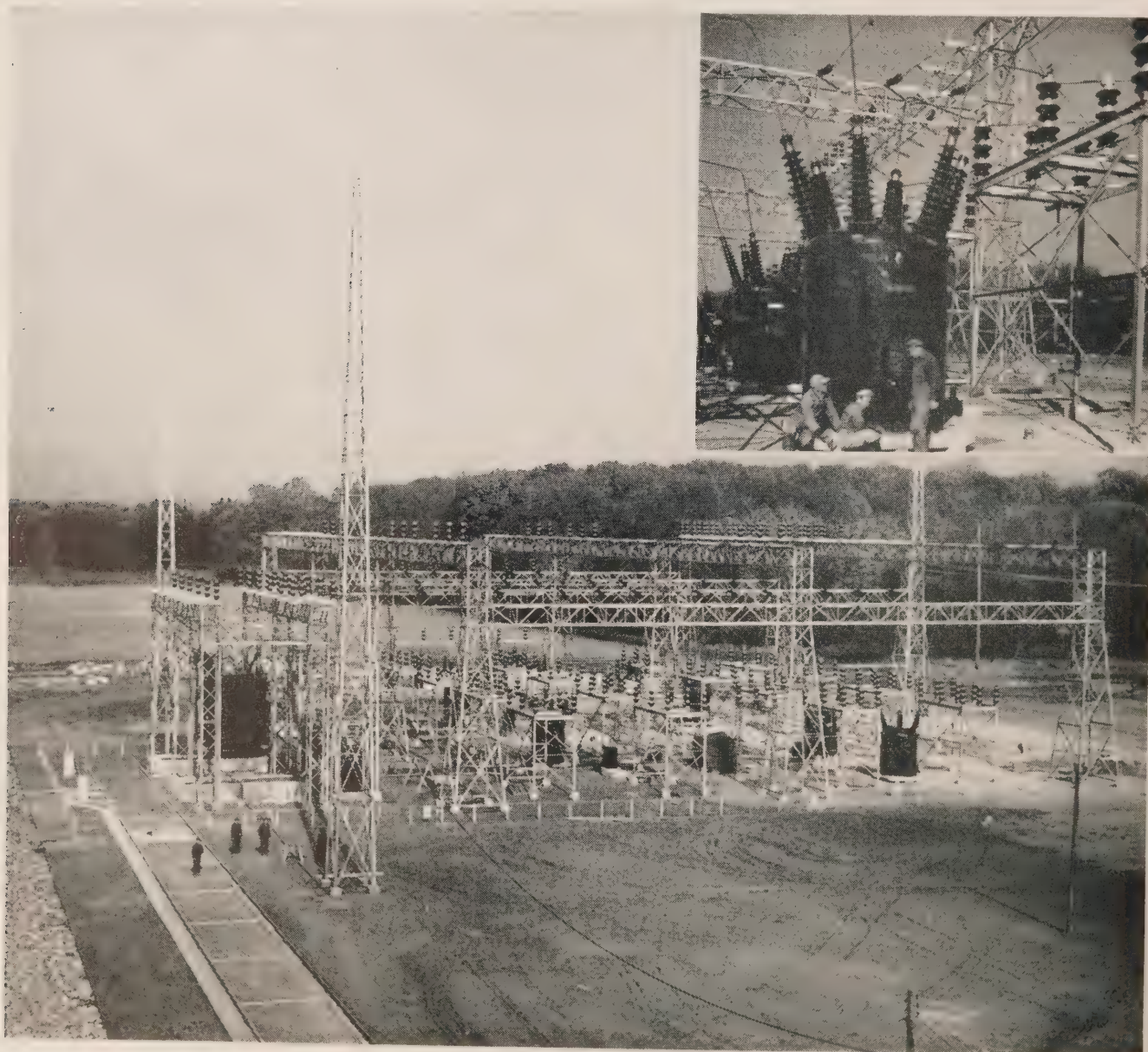
"If we had the water today, Hydro could supply 34,000,000 kilowatt-hours per day of electric power," he declared. "But nature did not co-operate. The facts are that in the Gatineau River a year ago the flow was 13,000 cubic feet per second. Now there is only a flow of 7,450 cubic feet."

Chairman Saunders revealed that the Stewartville generating station is produc-

ing only 300,000 kilowatt-hours of power instead of a normal fall and winter expectancy of 775,000 kilowatt-hours. It was like other plants on the Madawaska and Trent, he stated, in that it can operate at capacity only five to ten hours a day. This, the speaker said, was due to the lack of rain in the right places. Mr. Saunders declared that this condition showed the need for steam plants.

He pointed out that while there is no water shortage on the Niagara River, power developments there supply only 37 per cent of the present requirements of the Southern Ontario System.

"We should be thankful for the steam generated power plant at Polymer. It is



THIS IS the switching equipment at the Commission's new Frequency Changer and Transformer Station at Westminster near London. Here, the 60-cycle power is stepped down from 110,000 volts to 13,200 volts and converted to 25 cycles. Inset shows a row of oil circuit breakers in the 25-cycle area.

indeed fortunate that there is such a plant that will give power to Hydro, 24 hours a day," the Chairman declared.

Speaking for Trade Minister Howe, J. R. Nicholson, Executive Vice-President of the Polymer Corporation, revealed that delivery of steam-generated power to Hydro from Polymer climaxed a program of four years of hard work and co-operation between Polymer officials and the firm's engineers and The Hydro-Electric Power Commission and its engineers. He said that the aim was to make electric power available to Hydro which Polymer did not require for its own use.

"In 1944, it was felt that surplus electric energy might be used to supply not only Polymer but also to aid Hydro. When the power crisis developed in 1946, Polymer engineers were able to plan for power delivery to Hydro. Early in 1947, Polymer engineers had to do a great deal of work to make the tie-in possible," Mr. Nicholson revealed.

Tribute To Hydro Engineers

"But," the speaker declared, "that job falls into insignificance by comparison with the great work achieved by the Hydro engineers. The completion of Sarnia Transformer Station and the Westminster Frequency Changer and Transformer Station at Westminster in less than 20 months is a remarkable job."

Tributes were paid to the Hydro Commission and to the Polymer Corporation officials by Brian L. Cathcart, M.L.A., West Lambton.

"The Polymer power project indicates the foresight of the Hydro Chairman and his colleagues in taking advantage of a great opportunity here in Lambton West to get more power. Polymer Corporation is making a great contribution not only to the Sarnia area but to the province and the whole Dominion," Mr. Cathcart maintained.

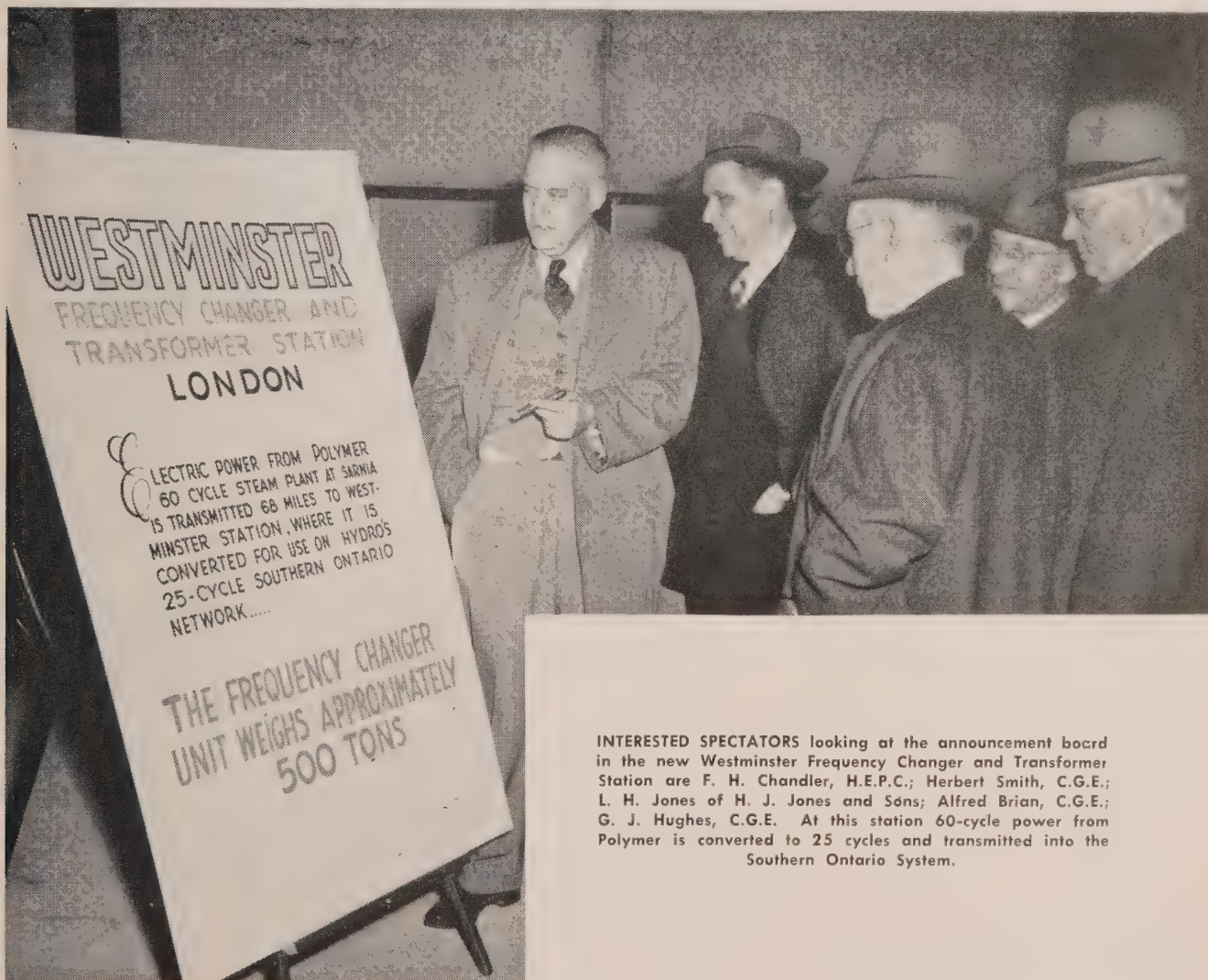
A similar opinion was voiced by J. W. Murphy, M.P., for Lambton West. He hailed the power transfer as an indication

of co-operation between provincial and federal crown companies.

Following the official button-pushing ceremony, symbolically turning on the power flow from Polymer into the Hydro's Southern Ontario System, Chairman Saunders called on E. J. Brunning, President of Polymer Corporation.

In a reminiscent mood, the speaker revealed his sentimental connection with Hydro. He stated that as an engineering student 40 years ago he had read about the H.E.P.C. developments in Canada, and particularly of the great work of the late Sir Adam Beck. Through friends, he said, he was able to get a letter of introduction to Beck and the subsequent meeting resulted in his first job. Mr. Brunning said that he had been employed at London Ontario on H.E.P.C. construction work.

"When we consider that the H.E.P.C. was criticized in 1910 because people thought the 110,000 horsepower developed was too much for the needs of the province, and that as much as 2,773,000 horsepower has been delivered in recent



INTERESTED SPECTATORS looking at the announcement board in the new Westminster Frequency Changer and Transformer Station are F. H. Chandler, H.E.P.C.; Herbert Smith, C.G.E.; L. H. Jones of H. J. Jones and Sons; Alfred Brian, C.G.E.; G. J. Hughes, C.G.E. At this station 60-cycle power from Polymer is converted to 25 cycles and transmitted into the Southern Ontario System.

months, those opinions of the early days appear ridiculous," Mr. Brunning declared.

Tremendous Expansion

The speaker said that the criticism today is that a power shortage exists.

"But," he stressed, "was anyone able to predict the great power demands of today?"

Mr. Brunning declared that leaders in industry predicted a slump in business after the last war. He said that no one was able to foresee the tremendous expansion of industry and the great business boom that actually did occur.

"I don't think the Hydro Commission or its Chairman, Mr. Saunders, have any reason to apologize for the present shortage of power," Mr. Brunning maintained.

Mayor W. C. Nelson, Sarnia, speaking briefly, observed that the Polymer plant which played such a big part in the war effort now is rendering vital service in peacetime by aiding Hydro. A similar opinion was voiced by Reeve Gordon Forbes of Sarnia township.

Inspect Steam Plant

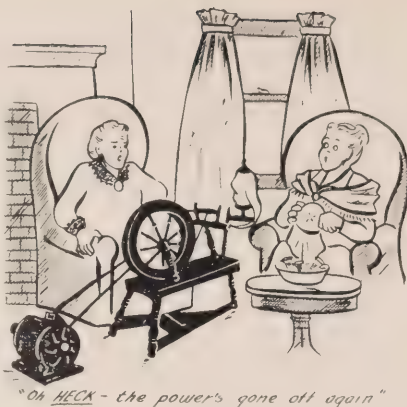
Following the ceremonies at the Polymer cafeteria, those attending the function were conducted on a tour of the extensive grounds of the Polymer Corporation plant and an inspection of the giant steam plant generating electric power. Later Hydro's new Sarnia Transformer Station, where the power from Polymer is stepped up to 110,000 volts for transmission over 68 miles of new line to Westminster Frequency Changer and Transformer Station, was inspected.

Members of the Commission, engineers, and Polymer officials departed for the London area where an inspection and celebration at the Westminster plant was held in the evening. There was a vibrant feeling of good fellowship, similar to that displayed at the Polymer ceremonies, at the dinner meeting held in the large dining hall at Westminster. Numerous compliments were paid to the engineering and construction departments of the Commission by various speakers.

Striking the key-note of the meeting, Richard L. Hearn, General Manager and Chief Engineer of the Commission, expressed confidence that the engineering and construction departments would, within the next two or three years, be able to get adequate power supplies for the consumers in Ontario in spite of the problems of weather and shortages of materials.

Shortages of Materials

The speaker revealed that in 1946, the engineering and construction departments of Hydro had set up a budget of \$32,000,



000 for construction work, but due to material shortages and slow deliveries only \$22,000,000 of that program had been completed. The following year, he said, a budget of \$56,000,000 was set up, and the Commission told manufacturers and suppliers the power picture. As a result, Mr. Hearn stated, this frank story bore fruit, and a \$45,000,000 program was realized. This year the Commission had an \$86,000,000 budget, and so far, Mr. Hearn declared, that budget was being maintained 100 per cent. The speaker pointed proudly to the fact that the 1948 budget doubled that of 1947, and the 1947 budget doubled the 1946 budget.

Mr. Hearn stated that he was pleased to have played a part in building the Polymer Corporation steam plant. He said that in 1942 he had been asked to go with Polymer, and that the seed for the steam plant had been sown in 1944. He expressed his pleasure at seeing the tie-in between that steam plant and the Hydro system come into being.

Concluding his remarks, Mr. Hearn declared: "We in Ontario are sitting on top of the world. We have a chance for progress and we are fools if we don't take it."

A. W. Manby, the Commission's Assistant General Manager—Administration, declared that the delivery of power to Hydro by Polymer and the opening of the Westminster station was an auspicious

occasion. He pointed to the fact that Hydro had just received notice of a further cut of 5,385,000 kilowatt-hours per week from Quebec.

"Now a gleam of light has appeared on the horizon through Polymer's co-operation in helping out in this emergency," he declared.

However, the speaker cautioned, Hydro still is faced with a serious situation. Mr. Manby said Hydro's delivery of power was reduced 30,000,000 kilowatt-hours per week because of the lack of rainfall in Ontario and Quebec.

Water Not There

"The water is not there, so we haven't the power. It is to be hoped that all here will co-operate with Hydro not only in their own homes, factories or farms, but will ask their neighbours to do likewise," he urged.

Speaking for the field forces and construction crews, John Stark, Hydro's construction superintendent, pointed to the fact that just one year ago, construction men arrived on the site of the Westminster plant, chased the cows away and started to work. He praised the work of labour and observed: "It is not the number of men but the quality of men who do the job."

During the ceremony, it was revealed by Chairman Saunders that the Westminster plant and the Sarnia Transformer Station had been completed six months ahead of schedule.

Proud of Teamwork

Arthur H. Frampton, Hydro's Deputy Assistant General Manager—Engineering, declared that he had been amazed at the work accomplished in the past month, and that he was proud of the teamwork that had made possible the completion of the Westminster station ahead of schedule.

"The jobs at Westminster and at Polymer were dual operations. This project has contributed a new major source of power to the Hydro system to help reduce the power shortage," he said.

Mr. Frampton praised the suppliers for completing delivery of equipment on time.

"Given the equipment, in a very short time we can restore that old Hydro slogan, 'Hydro is yours, use it,'" he maintained.

Other speakers included: David Forgan, the Commission's Director of Construction; Mayor George Wenige of London; Harry Allen, M.P. for Middlesex South; J. B. Hay, Chairman of the London Public Utilities Commission and a Director of the Ontario Municipal Electric Association; E. V. Buchanan, General Manager of the London Public Utilities Commission; R. M. Laurie, Regional Manager, H.E.P.C.; E. J. Brunning, President of Polymer, and J. R. Nicholson, Executive Vice-President of Polymer.



Aguasabon Plant Opened

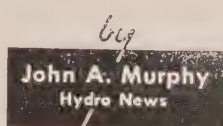


AN ARRESTING conception of the Aguasabon Development is afforded by this aerial view showing the main dam in the foreground. Note the thousands of logs in the forebay area at upper right.

On the rock-studded shoreline of mighty Lake Superior stands a new and arresting monument to man's engineering artistry and constructive genius. It has taken impressive shape in an area which, only a few years ago, was an untamed wilderness, and is symbolic of the continuing march of progress in Ontario.

This monument "came to life" on October 19 when Ernest Riddell, a senior Hydro construction foreman, stepped forward to flick the switch that set in motion one of the giant generators in the Aguasabon power plant, located at Terrace Bay, 130 miles east of Port Arthur.

Constructed at an estimated cost of \$12,500,000, Aguasabon will add 40,000



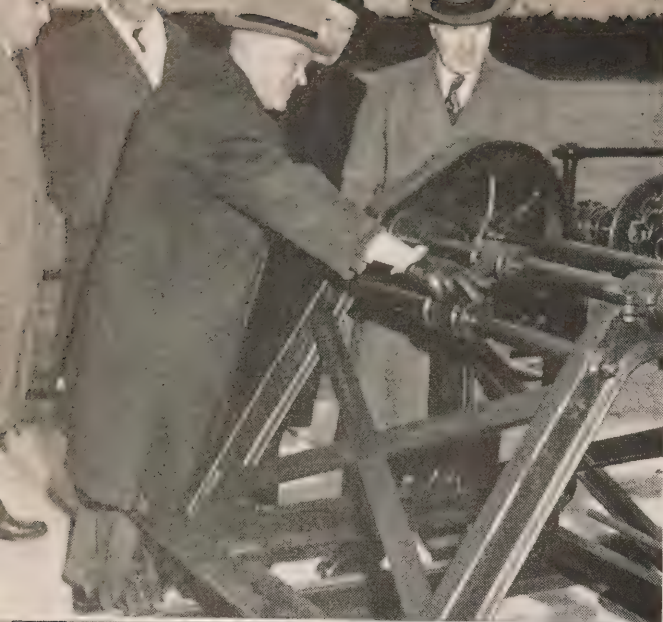
kilowatts (53,000 h.p.) to Hydro's resources in the Thunder Bay System.

It was a proud moment for Ernie and his feelings were shared by all his fellow workers who contributed so much to the building of the plant. Opening ceremonies were simple and brief. The Chairman of The Hydro-Electric Power Commission of Ontario, Robt. H. Saunders, on behalf of the Commission, welcomed the guests assembled in the powerhouse and then introduced the

other officials present on the flag-draped gallery. The party included W. Ross Strike, K.C., Second Vice-Chairman, Richard L. Hearn, General Manager and Chief Engineer, Dr. Otto Holden, Assistant General Manager—Engineering, A. W. Manby, Assistant General Manager—Administration, E. B. Easson, Secretary, A. H. Frampton, Deputy Assistant General Manager—Engineering, David Forgan, Director of Construction, J. M. Hambley, Director of Operations, H. W. Beck, Director of Supply, and M. J. McHenry, Director of Consumer Service.

Two who were singled out for special mention were Harold Johnston, Resident Engineer on the Aguasabon project, and

(Continued on page 12)



DR. OTTO HOLDEN, Assistant General Manager —Engineering, is shown here discussing technical points with an interesting group at Aguasabon. His listeners are, left to right—J. M. Hambley, Director of Operations, A. E. Fallon, Vice-President Harold Cooch of Canadian Westinghouse, and Alderman W. L. Bird of Fort William.



SUBJECT OF this discussion might well be that fiery plaid shirt being dashingly disported by Arthur H. Frampton. R. B. Chandler, David Forgan and J. G. Dowie seem unanimous in expressing their dazzled admiration.

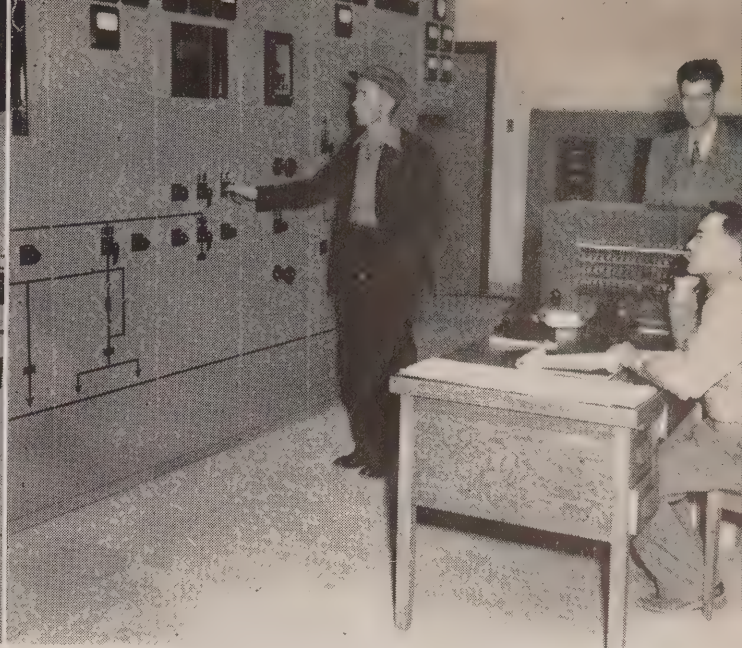
BELOW LEFT—C. J. Vick of the Commission staff is seen catching up on his photography on the Aguasabon dam under the careful scrutiny of J. J. Spooner, W. L. Bird and D. I. Mattress, Northwestern Regional Manager.

BELOW RIGHT—A section of the crowd in the powerhouse just prior to the official opening of Aguasabon.



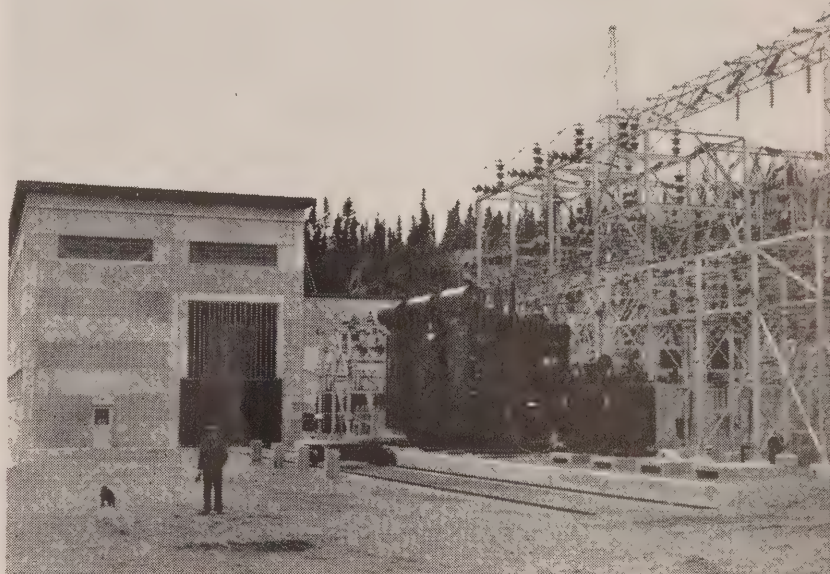


CASTING A critically approving eye over the panel in the Aguasabon control room upper left are A. E. Greer, Orville Johnston, Project Engineer; and George Simpson, Electrical Engineer.



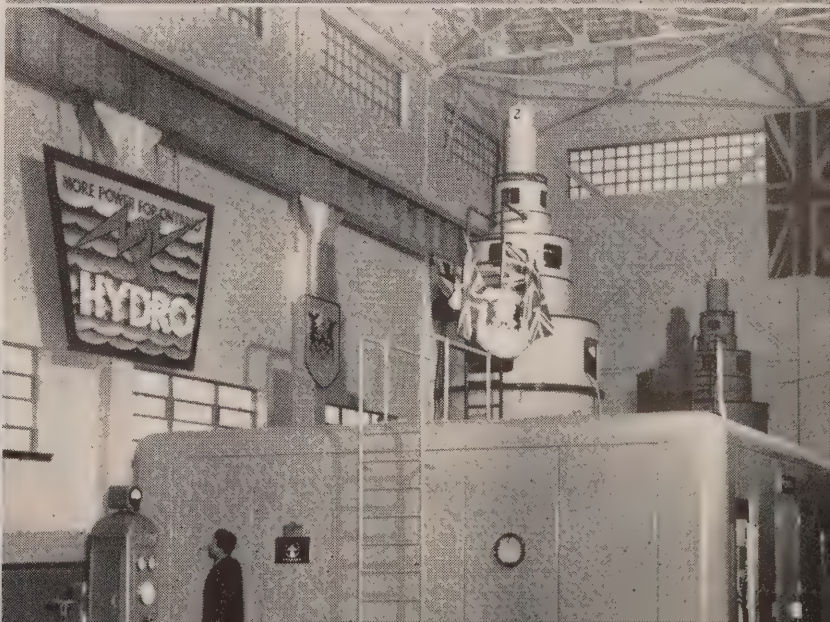
CHIEF OPERATOR at the new station is Les Crandlemire, shown standing behind the desk in the photo at upper right. Seated at the desk is First Operator J. D. Hamer, with Second Operator W. W. Wilson making an adjustment on the panel board.

THIS EXTERIOR view of Aguasabon shows the powerhouse at left with transformers in centre and the switching area at right.



LOWER LEFT—Here we see Foreman Ernest Riddell in the act of pressing the switch to officially open the new plant while Commission Chairman Robert H. Saunders and Richard L. Hearn, Hydro's General Manager and Chief Engineer, look on.

AT THE snap of a switch, the number two generating unit lower right, was set in motion to mark the official opening of the new Aguasabon plant.



AGUASABON PLANT

(Continued from page 9)

Charley Hays, Construction Superintendent. These gentlemen were given such a rousing ovation that Mr. Saunders suggested they must have "planted" several of their staff at strategic locations among the audience!

In more serious vein, Mr. Saunders stated that hydro-electric power was the greatest single factor in the economic development of Ontario. He also paid tribute to the Canadian Pacific Railroad which, in conjunction with other pioneers, had contributed so much to the development of the great Thunder Bay district.

"We are also indebted to those who have seen fit to invest so much in this part of the province," he continued, "and in this respect Aguasabon is a wonderful example of a public utility and a private organization working together. The guarantee of the LongLac Pulp and Paper Company to purchase a definite amount of power made it possible for us to proceed with this development. Of the 53,000 horsepower being developed here, 15,000 will go to LongLac and the remainder to the Thunder Bay System."

Model Townsite

The co-operation to which Mr. Saunders referred also found expression in the manner in which the two organizations combined to handle the visitors attending the opening. From the moment they were received at the railway station by specially-chartered LongLac buses and whisked off to an appetizing breakfast in the camp cafeteria, the visitors were made to feel at home. Prior to the opening of the power plant there was an inspection tour of the Terrace Bay townsite, and LongLac officials accompanied the party to answer the scores of interested inquiries.

Set in a locale of great natural beauty, the community of Terrace Bay is one that a weary urbanite might well regard with longing eye. The 215 houses, each of modern architectural design with its own stand of second growth timber, are built on the natural terraces from which the town draws its name. In matters of colour, the architect has tossed his inhibitions to the winds with the result that gay splashes of scarlet, yellow, green and brown are visible against the more reserved backdrop of earth and tree. A modern schoolhouse, up to date in every detail, looks after the educational requirements of the town's younger citizens. At present it has a staff of five teachers and has classes as far as grade eight, but provision has been made to add a high school wing as soon as there are sufficient students. To round out this compact community there is a 54-room

hotel, a 40-bed hospital, a branch store of the Hudson's Bay Company and a recreation hall and community centre. As excellent hunting and fishing abounds in the surrounding district, the residents of Terrace Bay have little to desire in the way of human comfort and recreation.

Brief And To The Point

After breathing that keen, bracing, and rather wintry northern air during the morning's activities, the assemblage was in ideal fettle for the sumptuous turkey dinner prepared by Chef George Brown and his staff. There was no guest speaker as such, but Mr. Saunders delegated each guest at the head table to deliver a brief treatise for two minutes, and two minutes only. To the credit of all the gentlemen concerned, may it be said that the Chairman's edict was productive of some very well chosen—and equally well abbreviated words.

Speaking of the Aguasabon development, W. Ross Strike, the Second Vice-Chairman, remarked that "A project of this type is proof of man's vision and intelligence. Men have turned this wilderness into a thriving community. In order to do that everyone had to co-operate. It is the type of co-operation we must continue to make our way of life a success."

Another head table speaker was Charles Sage, Vice-President of the Kimberley Clark Corporation and the LongLac Pulp and Paper Company. Mr. Sage emphasized the fact that there was more to his organizations' interest in Ontario "than mere monetary investment. We have invested \$60,000,000 in Canada," said Mr. Sage, "and about five-sixths of that is in Ontario. Nothing will be taken away without leaving a heritage that will be a credit to this country."

Following dinner, the company repaired to the shore of the headpond or the enlarged version of the tiny tarn once known as Blue Jay Lake. Now 500 times its original size, the lake seemed to merit a new name in keeping with its increased dimensions. The new name was not long in materializing, for with a few appropriate words Mr. Saunders announced that henceforth it was to be known as Hays Lake in honour of the redoubtable Superintendent of Construction.

From Hays Lake the party was conducted through the new LongLac plant at Terrace Bay. Guides were supplied who conducted the group through in small sections and explained the functions of the various processes in making wood pulp. The tour occupied the balance of the afternoon and supper was served back at the Hydro camp to a tired but good-humoured collection of "happy warriors."



THIS ILLUSTRATION shows the intake of the Aguasabon Development. The water enters radially from all sides through six ports controlled by a steel vertical cylinder gate and drops 270 feet through a concrete-lined shaft bored through solid rock.

ON THE RECORDS

By W. R. Mathieson,

Present-day demands of business have emphasized the need for an adequate and efficient system for filing and classifying of records stated C. G. McEvoy, Records Officer, H.E.P.C., in addressing the annual meeting of the Accounting and Office Administration Committee of The Association of Municipal Electrical Utilities.

Departing from the usual headquarters in London, this year's meeting, attended by over 200 delegates from utility offices, met on October 14th in Windsor. Acting Chairman J. F. Cook of Windsor Utilities Commission expressed regret that Chairman Edgar Wallace, was unable to be present.

Mr. McEvoy told the meeting how the Commission maintains a General Files Section which is known as the Mailing and Records Department. In the correspondence section all letters received, and a copy of each letter and memorandum sent out by every department are kept on file. One of the principal objectives of the Commission's Records Department, he stated, was to have a complete docket or file on any particular item available when it was required. It is the function of this section, he pointed out, to receive all incoming mail addressed to the Commission in Toronto, and the staff opens and segregates all letters. These are registered in books in which are recorded the date received, the date of the letter, the name and location of the sender, the subject, to whom it is referred and, finally the file number.

"Incoming correspondence," continued Mr. McEvoy, "is stamped. This is a designation stamp on which are inscribed the names of personnel to whom letters may be routed. There is space at the bottom of the stamp for data on the final disposition of a letter, viz., the name of the person replying, if a reply is necessary, the date of the reply and the file in which the letter should be placed."

Mr. McEvoy pointed out that the Records Department had four key men who were responsible for both placing the correct subject file number on all correspondence and reports, and for the indexing of all the files. He stated that experience had proved the efficiency of maintaining a minimum number of subject folders. As an example, he pointed out that all correspondence and reports between the Commission and Windsor P.U.C. has one file number.

In referring to legal documents, Mr. McEvoy stated that the filing of these documents had to be handled in an entirely different manner. His section was responsible for the filing of general use deeds, leases, low tension and high tension

easements, wire crossing agreements, and a miscellaneous group which included general contracts and insurance policies. These documents were kept indefinitely in steel file drawers in vaults, with the exception of insurance policies which were retained for only two years after the expiration of the policy. Leases and general contracts, he said, were filed alphabetically.

Getting back to what is known as the regular files, Mr. McEvoy told the meet-

ing that correspondence was generally placed in file folders in date order with that of the most recent date on top. These folders were filled to a uniform depth of 2 inches, and when a new folder was started it had the next consecutive number as a suffix.

Mr. McEvoy, in closing, indicated that he would be only too pleased to give Utility members first-hand information regarding his department.



CHARLES McEVROY, Records Officer, H.E.P.C., centre, takes a ribbing from Windsor's Mayor, A. J. Reaume (right), at the A.M.E.U. Accounting and Office Administration meeting held at Windsor recently, and J. E. Teckoe, Jr., President, looks all set to bandy words with R. H. Becker of Kitchener (left).



HEAD TABLE guests at the A.M.E.U. meeting were J. Clark Keith, Vice-President; E. H. Banks, Comptroller, H.E.P.C.; Gordon H. Fuller, Commissioner, Windsor P.U.C.; Russ Laurie, Western Regional Manager, H.E.P.C.; D. N. Durward, Galt, and W. R. Mathieson, Secretary.



Hydro HOME FORUM by Edith Emma Muir

HOME ECONOMIST

If 1,000 people replaced a 100-watt lamp in the kitchen lighting fixture with a forty-watt lamp, there would be enough electricity saved to supply the normal requirements in the average home for eight days. If every one of the 800,000 domestic consumers in Southern Ontario reduced their wattage there would be a tremendous saving.

* * *

Crisp, fragrant yeast rolls, fresh from the oven in an hour's time! No kneading, no shaping. Ten minutes to prepare, thirty minutes to rise and twenty minutes to bake. Use the reliable recipe on the package of quick acting yeast. (In fact, we use 2 packages for a 12 x 8-inch glass baking dish which makes 36 small rolls.) When you add the flour, add about a cup at a time, stirring until all the flour is mixed in well. Like all doughs, it is soft. Turn dough onto cloth-covered board that is lightly floured. Use the cotton cover for rolling pin and with a light touch roll dough into oblong shape. Lift dough into greased baking dish, pressing it into corners. Cut dough with scissors into twelve strips crosswise and two down lengthwise. Brush top lightly with melted shortening. Cover with a towel and let rise in warm place until double in bulk. Bake in hot electric oven of 450 degrees for 20 minutes.

* * *

Our business girls ask what to serve on a snappy cold evening after skating. Here is something easy and it saves electricity: Make cornbread according to the directions on a prepared muffin mix box. Bake in muffin tins. Combine a can of chicken, a can of condensed mushroom soup, $\frac{1}{4}$ cup milk and a teaspoon of grated onion in a saucepan. Heat mixture for 5 minutes after the crowd have gathered. Split cornbread muffins and pour chicken mixture between and over top.

* * *

Tired of applesauce? Then, graham cracker crust on top of heated applesauce will revive interest in apple desserts. Pour applesauce into greased casserole. Cream 4 tablespoons butter, $\frac{1}{4}$ cup granulated sugar, 1 teaspoon grated

STEAMED CARROT PUDDING

$\frac{1}{2}$ cup melted shortening
1 cup dry bread crumbs
 $\frac{1}{2}$ cup brown sugar
 $\frac{3}{4}$ cup all-purpose flour
2 teaspoons baking powder
 $\frac{1}{2}$ teaspoon salt
 $\frac{1}{4}$ teaspoon nutmeg
Grated Rind $\frac{1}{2}$ lemon
1 cup halved, seeded raisins
2 cups grated raw carrots
1 egg, slightly beaten
 $\frac{1}{3}$ cup sliced peel

Combine the ingredients in the order given, and mix till well-blended. Transfer to buttered pint-sized cans, filling them two-thirds full. Tie two thicknesses of waxed paper over the top. Place the rack in the cooker. Put the pudding on it. Pour in hot water to half the depth of the mold. Close the cooker. Pre-steam 30 minutes. Then add indicator weight; bring to 15 pounds pressure; cook 50 minutes. Slice and serve warm with a liquid fruit sauce.

lemon rind and 8 crushed graham crackers together. Spread this mixture over the top. Heat in the electric oven for 20 minutes. Place with other dishes for the meal according to time allowed.

* * *

There's a simple and a right way to line a pan for the round fruit cake. With a pencil draw a circle around bottom of pan placed on brown paper. Poke the pencil down the tube and mark the inner circle. Cut on these lines for the bottom section. Then, cut a strip 5 inches wide and 30 inches long. Nip 4 slits equally spaced about 2 inches into one side. Onto the greased sides fit the strip with paper overlapping to fit on the lower nicked side. Leave paper high to protect cake from too much browning.

* * *

That new aluminum foil, or parchment paper is wonderful for cooking sliced onions, slivered turnips. It protects the

aroma, and is especially recommended as a fuel saver. You place the packaged vegetables in the potato kettle or meat pan and cook on the same electric element.

* * *

Minute-timers are more important than alarm clocks these days. Every household should have one. The timer is set by turning the dial to desired intervals of one to sixty minutes and a loud, clear bell rings when the time is up. Besides timing pressure cookers, it may be used for all cookery items, photo-developing, telephone calls, timing the washing machine, heating baby's bottle, and even study hour.

* * *

Winter-style tomato juice is a nutritious and economical breakfast juice as well as a convenient appetizer and between-meal snack. Heat tomato juice with 1 bay leaf, a dash of onion salt and a few celery leaves until it is hot. Cover and let ingredients flavour it for 10 minutes, then strain and serve.

* * *

Whenever canned meats are to be sliced for sandwiches or cold meat platters, be sure to chill the cans thoroughly, remove both ends and push out the meat, using a wooden spoon on top of one cut lid.

* * *

Festive Cookies: Cream $\frac{1}{4}$ cup shortening with $\frac{1}{2}$ cup sugar. Mix 1 well-beaten egg, then 1 cup mincemeat into creamed ingredients. Sift and measure $1\frac{1}{4}$ cups flour, $1\frac{1}{2}$ teaspoons baking powder and $\frac{1}{8}$ teaspoon salt, and add to batter. Combine thoroughly. Drop by spoonfuls on a greased baking sheet and bake in a preheated oven at 375 degrees for 12 minutes. Makes about 3 dozen.

* * *

You asked about Mock Almond Paste? The proportions are $\frac{1}{4}$ cup sieved cooked sweet potatoes (dry as possible) beaten into $1\frac{1}{4}$ cups icing sugar and $\frac{1}{2}$ teaspoon almond extract.

* * *

Beg, borrow or use the pressure cooker to cook those plum puddings in wax-paper covered tin cans. You will save hours of electricity.

Approve Proposed Constitution For District No. 3, O.M.E.A.

Friendly Fort Frances Is Venue For Convention — Saunders, Challies And Strike Present — Chairman Announces Commission's Intention To Develop Boundary Falls

With the unanimous adoption of a proposed constitution, representatives of Hydro municipalities in North Western Ontario have taken the first step to form an officially constituted district (District No. 3) of the Ontario Municipal Electric Association.

This important decision was made at the first Hydro gathering ever held at Fort Frances whose Mayor, B. V. Holmes, and members of Council along with representatives of other local groups were out in force to extend a memorable welcome to the delegates from surrounding areas on September 8 and 9.

The importance of this historic gathering was further accentuated by the presence of Hydro Chairman Robert H. Saunders, who was accompanied by First Vice-Chairman Hon. George H. Challies, Second Vice-Chairman W. Ross Strike, K.C., and other Commission personnel.

The gathering at Fort Frances and the move to officially constitute District No. 3 reflect, in a large measure, the co-operative enterprise of the Hydro groups of Port Arthur and Fort William headed by F. G. Lovelady and Jack Pattison

respectively. These two municipalities have assumed the initiative in sponsoring arrangements for previous Lakehead Hydro conventions.

That Hydro is fully cognizant of the vital need for electricity in relation to the industrial and rural development of North Western Ontario was emphasized by Chairman Saunders in an address to a capacity gathering in the dining room of Fort Frances' Rainy Lake Hotel.

One of the important highlights of the Chairman's remarks, which were broadcast over the local radio station,

doing everything possible to develop Hydro in every section of the Province," declared Mr. Saunders.

In proceeding, he gave a comprehensive review of Hydro's tremendous over-all construction programme, involving the building of new power plants, transmission, transformer and distribution facilities in various parts of Ontario. It was a programme which, he said, was designed not only to catch up with the power demand but to pass it.

At another juncture, the Chairman remarked: "I have heard a great deal about rural extensions since arriving at Fort Frances. Your representatives are fighting hard for greater extension of rural service. I believe, and I know my colleagues agree, that everything possible should be done to encourage agriculture in Ontario. We recognize the vital contribution agriculture is making to our economy and the important way in which Hydro power is linked with that contribution. Bearing these facts in mind, the rural population of Ontario have a right to an equitable share of the available power."

Hon. George H. Challies, the First Vice-Chairman of the Commission, the principal speaker at the luncheon on the first day of the convention, reviewed in considerable detail the progress of Hydro

(Continued on page 18)

by
The Editor

was the announcement that the Commission intended going ahead as quickly as possible with the development of 150,000 horsepower at Boundary Falls on the Winnipeg River. He intimated that, in the near future, consultations in connection with these plans were to be held with representatives of Manitoba. At the same time, he pointed out, the Commission was exploring the possibilities of developing power resources at other sites, including 40,000 horsepower at Manitou Falls on the English River. "We are



JUST BEFORE the delegates to the O.M.E.A. convention at Fort Frances went in for the opening session, the Hydro News' photographer got this group picture in front of the Rainy Lake Hotel where the welcome sign was prominently displayed. How many can you identify?

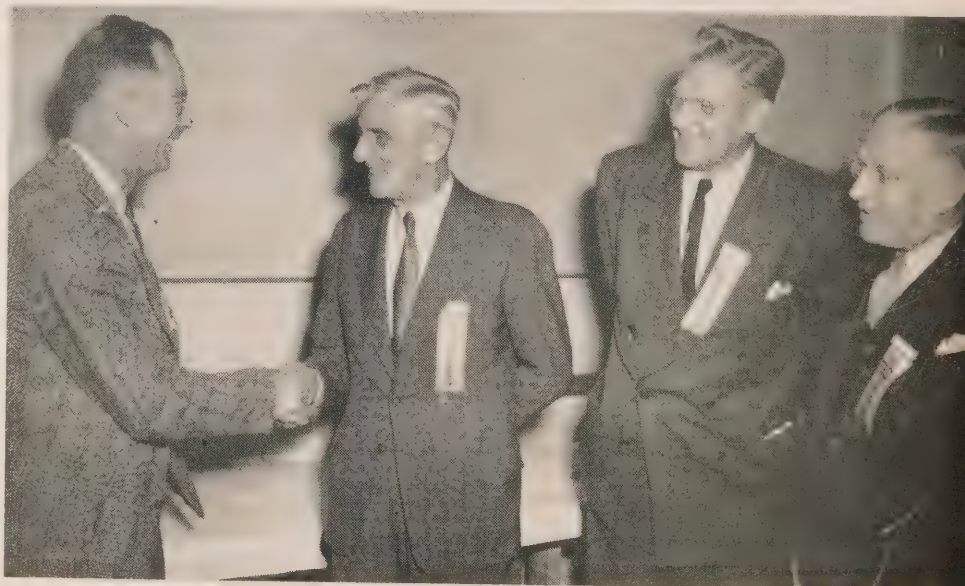


HERE ARE some of the men who were responsible for the arrangements made for the O.M.E.A. convention at Fort Frances—an event which was acclaimed as an outstanding success. Included in the group are (back row) R. A. Taylor, Superintendent, Fort Frances Public Utilities Committee, and Councillor G. Mitchell of Fort Frances; front row, M. A. Gynol, Chairman, Fort Frances Public Utilities Committee, and Mayor B. V. Holmes.



THERE IS usually plenty of action around the registration desk at any O.M.E.A. convention. This picture, for example, portrays a scene at the Fort Frances meeting. Among those in attendance are W. Ross Strike, K.C., J. Harshaw, Jack Pattison, R. B. Chandler, Manager of the Port Arthur Public Utilities Commission, and A. W. H. Taber, Manager and Secretary of the Fort William Hydro-Electric Commission.

A. F. WESTRAN and M. J. McHenry were caught in the act as they were exchanging cordial felicitations during the Fort Frances convention. The gentleman second from the right in this picture is L. B. Hulko.



REEVE A. R. ASCOUGH and Councillor R. P. Hudson of Jaffray-Mellick Township went to Fort Frances hoping that they might have an opportunity of discussing local Hydro problems with some of the Commission's top-ranking officials. They found themselves ushered into the presence of Chairman Robert H. Saunders himself who extended a cordial welcome. During the interview this picture was recorded, showing Reeve Ascough on the left, Mr. Saunders, centre, and Councillor Hudson on the right.

DURING A recess between sessions, this candid and informal picture was flashed by Burt Helling just as G. J. Hutcheson, President of the O.M.E.A., was rendering a timely service to W. Ross Strike, K.C., the Commission's Second Vice-Chairman, who apparently had cigarettes but no matches. The two gentlemen on the left are J. D. Phillips, Reeve of Schreiber, and Hon. George H. Challies, the Commission's First Vice-Chairman.



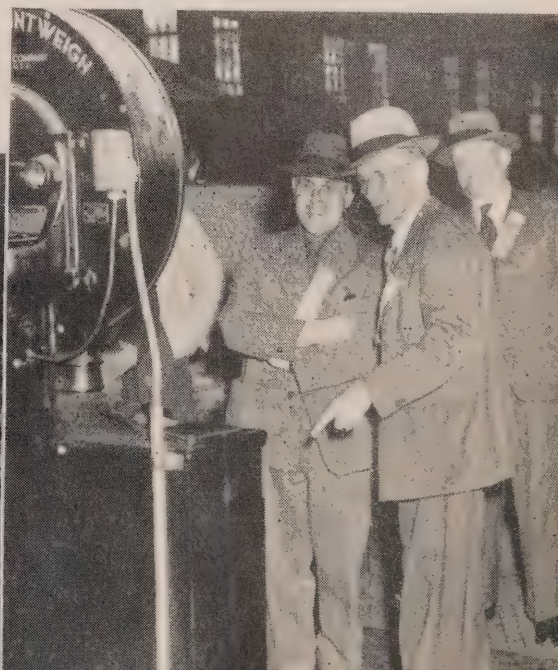


THIS ILLUSTRATION would have been even more interesting if the boys had been wearing bell bottom trousers! The picture was taken during a trip on Rainy Lake sponsored by the Ontario-Minnesota Pulp and Paper Company as part of the social programme during the Fort Frances convention. Among those identified are E. T. Lough, H. MacGregor, J. Ostrander, E. A. Vigars, J. R. Pattison and J. Harshaw.



VENUE OF the business sessions of the O.M.E.A. convention at Fort Frances was the Town Hall. As the delegates were emerging from one of the sessions the Hydro News' photographer got this photograph, showing the "two musketeers," Jack Pattison and Albert Jennings, leading the parade.

ONE OF the interesting events planned during the Fort Frances convention was a tour of inspection of the Ontario-Minnesota Pulp and Paper Company's mills on both the Canadian and American sides of the border. Included in this photograph, taken during the tour, are E. A. Vigars, J. Ostrander, H. Nymark, F. Greenslade and M. J. McHenry.



THIS ILLUSTRATION (below) would not indicate that weighty problems were under discussion although the Editor and Albert Jennings had been caught flat-footed on the scales with Jack Pattison (in the background) taking a reading and muttering about the terrific strain which was being imposed on the equipment!

DISTRICT No. 3 O.M.E.A.

(Continued from page 15)

in Ontario. He not only directed attention to the steadily increasing demands for power in Ontario but pointed out that Canada as a whole was leading the world in kilowatt hour consumption per capita. In this connection, he cited the following per capita kilowatt hour figures: Canada, 3,420; United States, 2,170; Sweden, 1,840; Great Britain, 890.

Mr. Challies also discussed the magnitude of Hydro's present construction programme which, he pointed out, would add over 750,000 kilowatts (over 1,000,000 horsepower) over the next two or three years.

The speaker, like Mr. Saunders, paid sincere tribute to the outstanding work which is being done by Richard L. Hearn, the Commission's General Manager and Chief Engineer, and members of the Commission staff.

"I want to pay the greatest tribute to the engineering staff, the equal of which you cannot find on the North American Continent or in Europe," declared Mr. Challies. "These men are working long hours and giving of their best in order that Hydro's problems may be solved and in order that the people of Ontario may derive the greatest possible benefit from Hydro."

Both Mr. Challies and Chairman Saunders expressed the hope that present negotiations would culminate in the proposed St. Lawrence power development becoming a reality.

In his address to the delegates, W. Ross Strike, K.C., the Commission's Second Vice-Chairman, stated that Hydro was one of the common denominators across this Province not only in holding it together but in building it into a compact unit of which they might all be proud.

"Engineers tell us," continued Mr. Strike, "that what they call the art of transmission is progressing so fast that power can be transmitted twice and even three times the distance it is being transmitted at the present time. That means that water powers in inaccessible areas will become available to us. It means that right across this Province new developments will be considered and brought in progressively as we go along from year to year."

Proceeding, Mr. Strike said: "That means there are increasing responsibilities not only upon the Commission and its staff but upon the municipalities connected with the Hydro organization. It means that when we generate this power you must be prepared to distribute it. Your facilities must be put into the best possible shape for the progress which is bound to be made in the next few years.



IT HAS been claimed that Albert G. Jennings, Chairman of the East York Hydro-Electric Commission, would be prepared to walk, go by train, plane or boat—or even cycle—in order to attend an O.M.E.A. convention. On arrival at Fort Frances he endeavoured to prove his point, as shown above. Among those in attendance are M. A. Grynol, Chairman of the Fort Frances Public Utilities Committee, and Mayor B. V. Holmes of Fort Frances on Mr. Jennings' left.

That, generally, is the picture that is facing us."

Mr. Strike paid high tribute to the engineers and workers on the various Hydro projects now under construction and added: "The job that is before all of us is to develop the resources that Nature has given us to make this one of the finest provinces in the Dominion of Canada and bring the living standards of the people to as high a level as we can bring them. That means each one of us has a job to do."

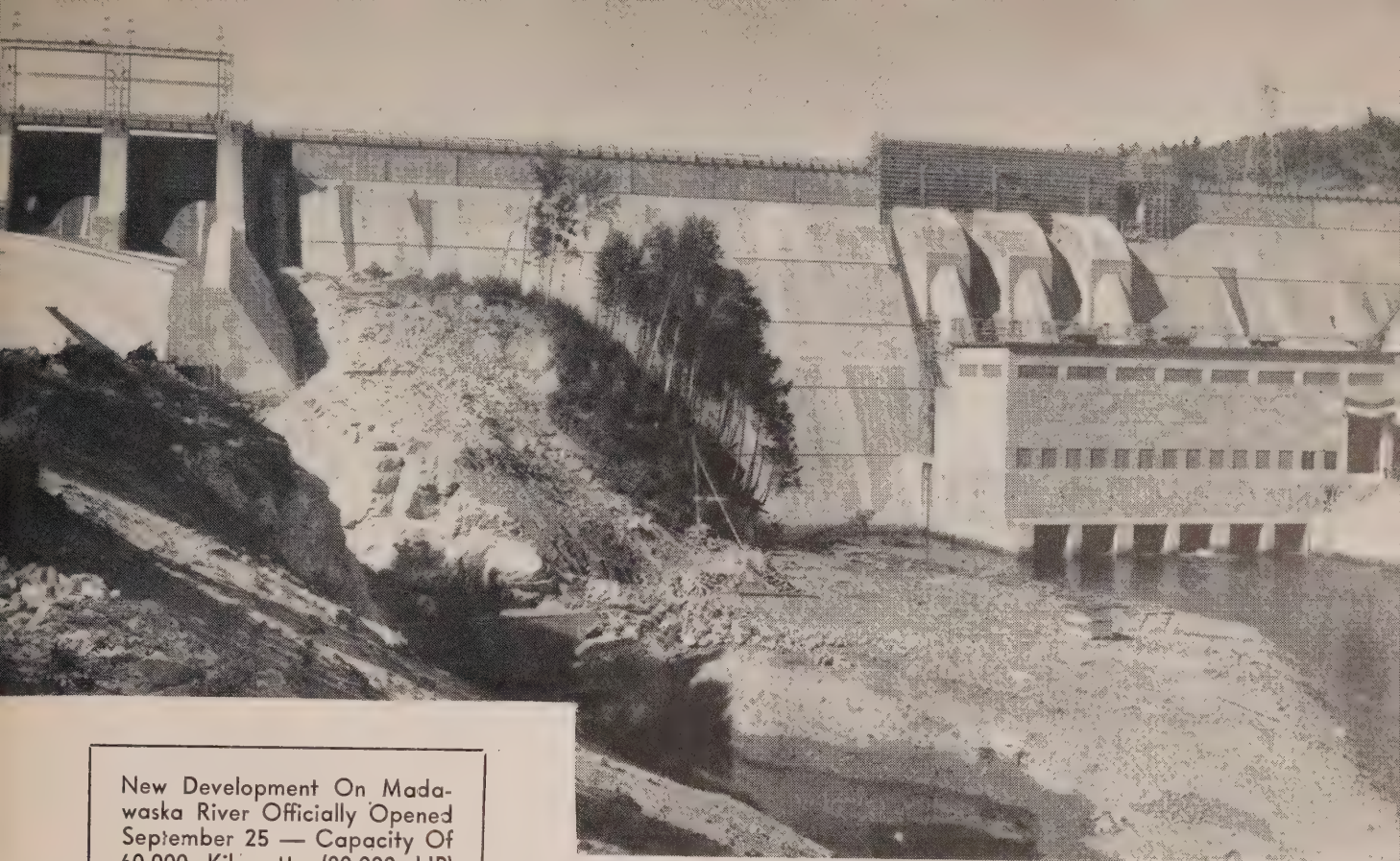
A. W. H. Taber, Manager of the Fort William Hydro Commission, in an address prior to the presentation of a proposed constitution for District No. 3, O.M.E.A., explained how the O.M.E.A. had been originally organized on the basis that each district in the Province would have a voice through representation on the executive. He explained how each district had set up its own constitution so that it could deal with matters pertaining to its own part of the Province. In essence, he stated, District No. 3 em-

braced municipalities in the Thunder Bay, Rainy River and Kenora districts. For a number of years No. 3 had not functioned as a district due to the fact that only two of the municipalities were originally receiving power from Hydro.

Continuing, Mr. Taber stated that back in 1941, the first meeting of District No. 3 was held and the Lakehead cities had felt at that time that a certain amount of profit would result from becoming organized and operating as a district. Certain of the municipalities were not members of the Hydro family but they had many things in common. Without any constitution at all District No. 3 had held a convention as an experiment. It had proved successful and they had continued to hold conventions. "It is felt now that the district should be organized under a proper constitution," Mr. Taber said.

Finally, on motion of Sam Ashton of Port Arthur, seconded by Jack Pattison

(Continued on page 22)



New Development On Madawaska River Officially Opened September 25 — Capacity Of 60,000 Kilowatts (80,000 HP)

One more link in the chain of new Hydro developments now under construction was forged on September 25, when Edward, 10-year-old son of former Premier George A. Drew, reached up and pressed the switch to officially open the new Stewartville development on the Madawaska River and send 60,000 kilowatts (80,000 hp) pulsing into the Southern Ontario System.

Those in attendance at this important event included Commission Chairman Robert H. Saunders, Hon. George H. Challies, First Vice-Chairman; W. Ross Strike, K.C., Second Vice-Chairman; Richard L. Hearn, General Manager and Chief Engineer; Dr. Otto Holden, Assistant General Manager, Engineering; A. W. Manby, Assistant General Manager, Administration. Hon. Leslie Frost, Provincial Treasurer, represented the Ontario Government.

The opening of Stewartville marked the third step in Hydro's tremendous all-out construction programme which, to date, has also brought to service additional generating units at both the DeCew and Ear Falls' developments.

While the additional power made available to date is vitally important at this time, Mr. Saunders has pointed out that it is still just "a drop in the bucket" in relation to the present serious power shortage. However, as new plants come into service over the next two or three years, conditions are expected to become

STEWARTVILLE

Plant Placed In Service

by
John A. Murphy
Hydro News

progressively better, he stated, and by 1951 Ontario should be "out of the woods" so far as power supply is concerned.

The weather for the opening of Stewartville might well have been ordered in advance. It was the type of day one expects but seldom realizes when the forecast reads "clear and warm." Early arrivals upon the scene were greeted by a refreshing breeze and clear blue skies—indeed a perfect setting and one that showed the majestic functional beauty of the development to the best advantage. (Commission engineers, however, would have been happier if it had rained steadily and heavily, in the right places to help relieve the critical shortage of storage water.) A public address system was set up in the powerhouse and, prior to the ceremony, the banks of the Madawaska resounded to stirring martial airs and lilting waltzes, a marked change from previous months when the only

music was the throaty roar of the concrete mixer and the ring of the carpenter's hammer.

Actually the number one unit was pressed into service earlier in the week as soon as tests had been completed in order that the additional power might be made available without delay. However this preliminary measure in no way detracted from the satisfaction felt by all those connected with the building and operation of Stewartville when young Mr. Drew again pressed the switch and filled the crowded powerhouse with the roar of the mighty turbine.

As he began his address, Mr. Frost remarked that the lad at his side was representing the youth of the province and the part they would take in its future development. "Every new power plant that is built in Ontario," said the speaker, "is symbolic of our continuing progress. Power plants in a very literal sense are highly accurate barometers of the truly amazing growth we are experiencing."

At the same time the audience was again reminded of the paramount need for saving as much electricity as possible.

(Continued on page 22)



ABOVE LEFT—Congratulations for an excellent luncheon are extended to Chef Ellis Campbell by Commission Chairman Robert H. Saunders with the smiling approval of his fellow commissioners W. Ross Strike, K.C., and Hon. George H. Challies.

ABOVE RIGHT—Milton Stewart, Reeve of MacNab Township for the past 27 years is seen here with W. B. Crombie, Project Engineer at Stewartville, Commission Chairman Robert H. Saunders and Richard L. Hearn the Commission's General Manager and Chief Engineer.

CENTRE—Edward Drew, 10-year-old son of the former Ontario Premier, presses the switch that officially opens the Stewartville Plant. Left to right on the official platform are Richard L. Hearn, Hon. George H. Challies, Mr. Saunders, Hon. Leslie Frost, Provincial Treasurer, and Edward Drew.

BELOW LEFT—Left to right in this group we find H. R. Phillips and Mayor W. F. Reynolds of Brockville, A. L. Farquharson, Manager of the Brockville Public Utilities Commission, E. G. Gurnett, H.E.P.C., Toronto, and R. J. Smith, Manager of the Public Utilities Commission at Perth.

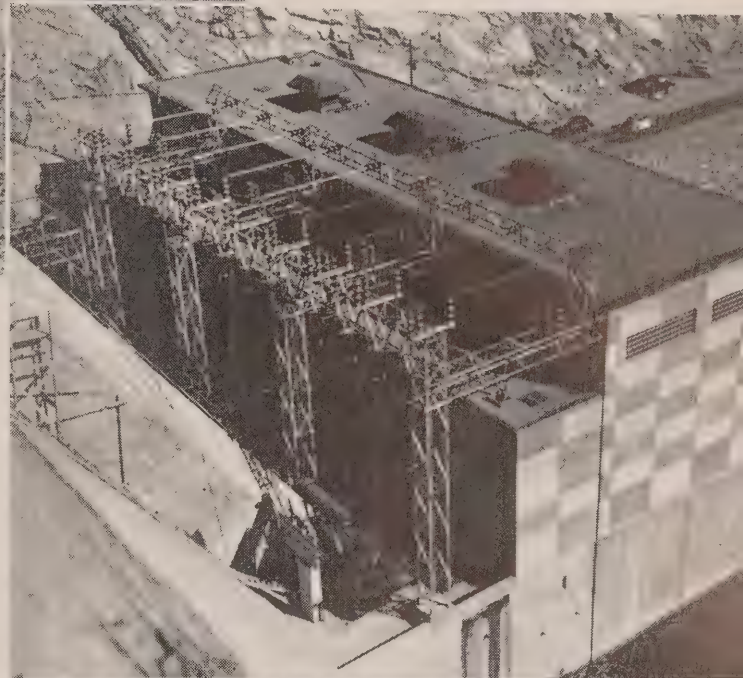
BELOW RIGHT—Left to right, E. G. Ireson, Generation Engineer, S. W. B. Black, Senior Project Engineer, George Simpson, Electrical Engineer and J. R. Crerar, Project Engineer.



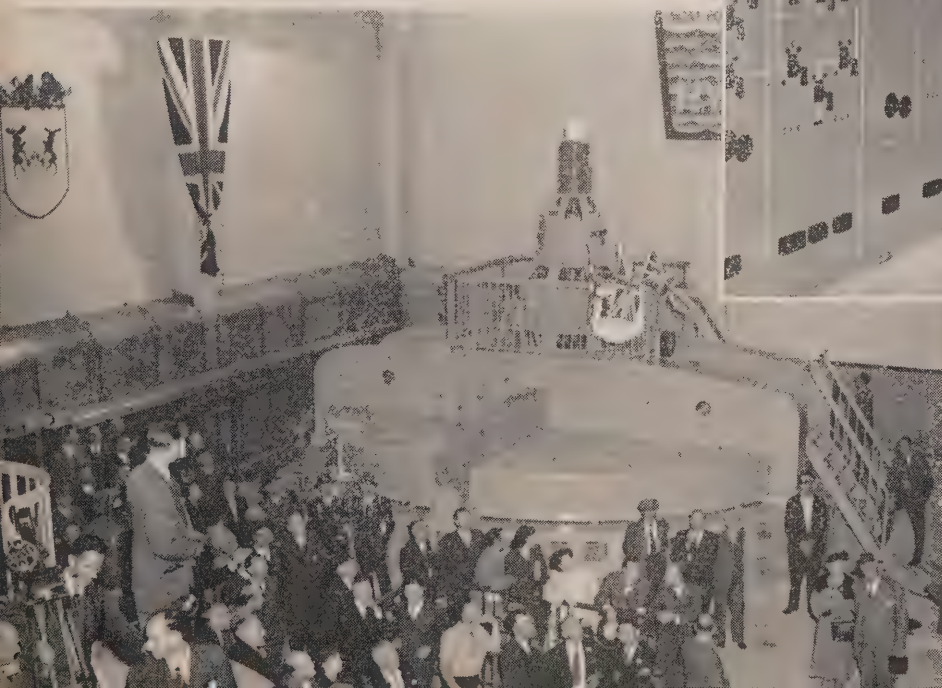
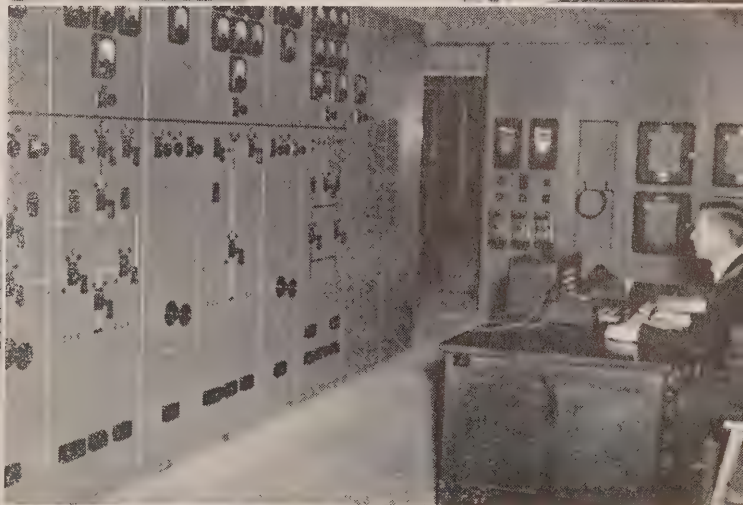


GENERAL OVERALL layout of the Stewartville Plant is portrayed in this reproduction showing the powerhouse and main dam with the sluiceways visible at the upper left.

HERE, THE photographer was forced to defy the law of gravity to obtain the unusual angle shot at right looking down the face of the dam towards the rear of the powerhouse.



CONTROL BOARD, nerve centre of the new Stewartville generating station, is shown lower right. Seated at the desk is Keith Parks of the Operating Staff.



SOME OF the spectators who attended the opening ceremony in the powerhouse are seen here grouped around the number one unit, first of the three generators at Stewartville to officially go into service.

STEWARTVILLE

(Continued from page 19)

"Power is the life blood of the nation," stated Mr. Frost, "do not waste it."

Continuing, the provincial treasurer pointed out that "We in Ontario are very fortunate, but sometimes I think we do not fully appreciate our good fortune. Those of you, however, who have had a chance of seeing other and less fortunate countries in Europe, know that we are privileged to live in one of the greatest provinces of one of the greatest countries in the world today. This indeed is a land of opportunity where, under a truly democratic way of life, free men can give the fullest expression to individual initiative."

By way of illustrating Ontario's leading position among users of power throughout the world, Mr. Frost stated that this province uses four times as much power per capita as Great Britain and twice as much per capita as the United States.

Encouraging News

Referring to the other Hydro developments under construction throughout Ontario, the speaker discussed the encouraging news that the giant Des Joachims Plant will probably go into service in the spring of 1950—about six months ahead of schedule—if the present rate of progress can be maintained. This would mean an additional 179,000 kilowatts (240,000 hp) from the first four units, and this total would be increased to 358,000 kilowatts (480,000 hp) when the four remaining units began operation in the fall of the same year. With the completion of other projects at Pine Portage on the Nipigon River, the Tunnel on the Mississagi River, and Chenuaux, on the Ottawa River below Des Joachims, more than 1,000,000 horsepower will have been added to Ontario's resources by 1951, said Mr. Frost.

Temporary Problem

"The present problem, and it is a temporary one," he concluded, "is to see that the present available supply of water power is used to the best possible advantage in generating power to maintain employment at a maximum level and to keep the pay envelopes of the people full."

Following the ceremony, the guests repaired to the dining hall, where Chef Ellis Campbell had directed his extraordinary culinary talents to the preparation of a delicious luncheon. During the festivities Mr. Saunders displayed another side of his versatile nature when he took over the role of master of ceremonies and handled the "mike" with the aplomb of a veteran. One by one the men who had been instrumental in the successful cul-

mination of the Stewartville Project were asked to stand up and receive well-earned applause. Some of the boys showed such a genuine blushing reluctance to comply that they had to be pushed to their feet by their unsympathetic companions and then immediately set a new record in regaining their seats and piling furiously into their dessert.

Thus the completion of Stewartville, as Mr. Saunders pointed out, marked another step in the march of progress throughout Ontario and Canada as a whole. The dams and powerhouses of the Commission, he stated, were working monuments to the "white coal" that is pacing our country to the greatest era of development and prosperity in its history.

DISTRICT No. 3 O.M.E.A.

(Continued from page 18)

of Fort William, the following motion was carried unanimously: "That the proposed constitution for District No. 3 O.M.E.A., as presented at the annual meeting, be approved and the chairman of the district be authorized to appoint a committee of two who will act with him and that the committee will finalize the constitution as amended, and have same prepared for distribution to member municipalities at the earliest date."

In addition to the business sessions of the convention, there were a number of interesting, pleasant and memorable side-lights. For example, the spontaneous friendliness of the people of Fort Frances is, in itself, something which must be experienced to be fully appreciated. Hydro News had the privilege of meeting and talking to many people who have made, and who are making, a noteworthy contribution to the building up of this important section of Ontario.

In Fort Frances itself where they have a Public Utilities Committee, made up of a Committee of Council, Hydro News had an opportunity of seeing the members of this group in action doing not only the big things involved in conducting a convention but in doing those hundred and one little things which never make the headlines but which are so important.

One would be tempted to describe the Chairman of this Committee as "one of these unforgettable characters." He seems to be always smiling, always dynamic, always eager to make new friends—and keep them. His name is M. A. Grynol. It was rather a startling experience, after having seen him in a business session, to suddenly run into him and find him in the attire of a chef, complete with tall white hat. It made one blink. But Mr. Grynol is the man who directs the culin-

ary activities at the Rainy Lake Hotel. All who attended the luncheons and banquet will agree that Mr. Grynol is more than a master in his chosen profession. He is an artist.

In making the arrangements for the convention, Mr. Grynol had the able assistance of Councillors D. Foran and G. Mitchell and R. A. Taylor, Superintendent. And then there was no mistaking the cordiality of the civic welcome extended by Mayor B. V. Holmes.

A Familiar Figure

And while on the subject of personalities, one of the guests was Albert G. Jennings, Chairman of the East York Township Hydro-Electric Commission. One of the most widely respected as well as one of the most widely known members of Ontario's Hydro family, Albert is a familiar figure at practically every O.M.E.A. convention, regardless of where it is held. In fact, if an O.M.E.A. convention were scheduled to be held at the North Pole, it is a pretty safe bet that East York would be represented. At Fort Frances, Albert, of course, ran into his buddy, Jack Pattison, and while the latter was suggesting that Albert's presence indicated a need for closer scrutiny of characters approaching the registration desk, Albert was proclaiming the fact that his visit would have been very pleasant but for the fact that he had had to "put up with Jack Pattison!" One could not help but note, however, that they were seldom apart!

To come back to the convention arrangements and the passing out of orchids for a job well done, one could not overlook R. B. Chandler, Manager of the Port Arthur Public Utilities Commission, who like his counterpart, Art Taber at Fort William, appears to possess unlimited energy and goodwill. Then there was F. G. Lovelady, Chairman of the Port Arthur Commission, who is stout of heart if not loud of voice, and an untiring Lakehead ambassador of goodwill.

A Real Inspiration

Another personality who impressed by his quiet sincerity and friendliness was George F. Hutcheson, Chairman of the Huntsville Public Utilities Commission and President of the O.M.E.A. "It is a real inspiration to come to this part of the country and see something of its magnitude," he told the delegates.

Among these who took part in the proceedings were Mayor D. F. Moberly, and J. E. Cole, Manager and Secretary of the Sioux Lookout Hydro-Electric System; Reeve A. R. Ascough and Councillor R. P. Hudson of Jaffray-Mellick Township; Mayor Garfield Anderson of Fort William; J. D. Phillips, Reeve of Schreiber; Harold Moore, Reeve of Eagle River; Mayor J. L. Skillen of Dryden and many others.

Teamwork Spirit Revealed In Power Saving Efforts

District No. 6 O.M.E.A. Delegates Pay High Tribute To Business Men — Co-operating To Fullest Extent In Voluntarily Cutting Down Use Of Electricity.

"Lights Out!"

That appears to be the order of the day—and night—so far as manufacturers and merchants are concerned in the busy communities in the area represented by District No. 6 of the Ontario Municipal Electric Association.

The story was brought to light—the pun is quite unintentional—at the annual convention of District No. 6 held recently at Galt. It was Harvey Hawke, Chairman of the Galt Public Utilities Commission, who started the ball rolling. With an air of modest but quite justifiable pride, Mr. Hawke was telling the gathering just what

measures the shopkeepers of his own city were taking to further reduce their consumption of electricity. Other delegates, not to be outdone, were quick to take the floor and present the picture as it applied to their own communities.

Their observations indicated a reassuring and heartening sense of public respon-

by
John A. Murphy
Hydro News.

sibility and citizenship in the towns and cities concerned. It was revealed that many store owners were turning all their lights out at 5.30 in the afternoon and leaving them out until ten o'clock the following morning. In many cases this was tantamount to cutting down on actual

business hours as it was impossible to carry on in the gloom of late afternoon or early morning. Another step that was voluntarily taken was to further cut down the amount of lighting per square foot to well below the maximum set down in the emergency regulations. All in all, as retiring President George Gordon of Kitchener pointed out, competition between municipalities in matters of this kind was a healthy sign and something to be encouraged in the future.

Other highlights of an eventful and very pleasant day included the luncheon at the Iroquois Hotel at which Hydro officials spoke briefly on the state of the power emergency. The thanks of the Commission was expressed by W. Ross Strike, K.C., Second Vice-Chairman, to the municipal commissions for their efforts to ob-

(Continued on page 30)



W. J. BISHOP and D. E. Kennedy of Guelph smilingly tender their registration fees to Mrs. Kay Kestell, the O.M.E.A.'s comely secretary.



MEET THE members of the executive of District No. 6 O.M.E.A. for the 1948-49 semester. Seated are C. K. Merner, New Hamburg; F. E. Welker, St. Jacobs; J. W. Monteith, Stratford, President and G. W. Gordon, Kitchener. Standing: left to right we find A. E. MacIntyre, Stratford; F. O. Pelz, Preston; Harvey Hawke, Galt and J. H. Francis, Tavistock.

MEMBERS OF this foursome, engaged in earnest conversation, are Dick Thomson, Paris; Fred Weston and E. C. Piehl, Tavistock and A. J. Cundick, Kitchener.



ONE OF the most interesting and witty addresses at District No. 6 convention was that delivered by the Rev. Crawford Scott of Hamilton. The above illustration shows him "in action"

ALL THE press of business could not make these fellows forget that the World Series was in progress. The diamond devotees around the radio are George Unger, Brantford Township; W. McLeod, Hespeler; Roy Pierson and H. A. Howard, Brantford Township; and Fred Weston, Tavistock.



THIS PHOTO at left might well be an unscheduled meeting of the Galt Public Utilities Commission. Beginning at the left are H. R. Baer, George Hancock, now deceased, Mayor J. M. Moffatt, D. W. McCormack, Chairman Harvey Hawke and J. E. Teckoe Jr., Manager and Secretary.

Power Shortage To Be Worse Commission Chairman Warns

Reiterating the vital necessity for voluntary, consistent and conscientious co-operation among all classes of consumers in helping save power, Commission Chairman Robert H. Saunders warned delegates to the Eastern Ontario Municipal Electric Association Convention that the power shortage "will become a little worse as time goes on."

The convention took place at the Kemptville Agricultural College on September 17.

Forced To Cut

The chairman pointed out that the commission had been forced to cut the larger industries in the Niagara Peninsula during the summer and he asked that the people of Ontario and, particularly in Southern Ontario, please realize that it was not always possible to give one day's notice or even half a day's notice of these cut-offs. It was the Commission's earnest endeavour, he said, to use every single kilowatt-hour that could be obtained.

Mr. Saunders informed his audience that when weather reports heralded a cloudy, cool day, special appeals were immediately broadcast over local radio stations to publicize the fact and urge everyone to save electricity in every way possible. In this way, he said, they were endeavouring to obtain the co-operation of everyone. He also commended the newspapers for their fine co-operation in the conservation program.

The Hydro Chairman went on to say that he had been in touch with every source where there was any hope of obtaining additional power.

Asked To Stagger Hours

The speaker made reference to the fact that earlier in the year, on June 21 to be exact, he had asked that industry stagger its working hours and spread the available power throughout the 24 hours of every day of the entire week. He reported that, in many cases, industry had done this and Hydro appreciated that co-operation.

The Chairman said that the Hydro was not telling any municipality how to save power, but they were making certain suggestions. One suggestion was that water heaters might be cut off from 12 noon until midnight two days one week, possibly Wednesday and Friday, or Thurs-

by
Grace J. Carter
News Editor

day and Friday. By doing that, he said, it was estimated that a saving of 500,000 kilowatt-hours on each of these days could be effected. He also suggested that the week after that the water heaters might be turned off every afternoon, Monday through Friday, from either 4 to 11 o'clock, or from 5 to 12.

Discussing quotas, the Chairman stated that messages had been received from many municipalities, suggesting that the quotas were too low. Analyses of the situation in each municipality were being made, he pointed out, and it was possible that a re-allocation of loads might be considered. He asked that they please realize that the Commission were

**Saunders Reiterates Vital
Necessity For All-Out Conser-
vation — Addresses Eastern
Ontario Municipal Electric As-
sociation Convention**

doing their best to apportion the available power as equitably as possible. However, the situation was nip and tuck throughout. Each day, he emphasized, presented a different problem.

While skyrocketing demands for power had created a temporary serious power shortage, the Chairman explained how that problem had been gravely aggravated by the prolonged period of dry weather. Water levels on the Ottawa and other rivers on which power plants are located had been falling steadily. As a result, the supply of energy or water with which to generate electricity was steadily decreasing.

Guest speaker, D'Arcy Finn, Executive Editor of the Ottawa Citizen, emphasized the general theme of the meeting—the need for co-operation in the conservation programme. He likened the newspaper business to sitting on a railway coach and looking at the passing scene. What had interested him most in the past 50 years, he said, was the development of electricity, which in that brief

span had developed into the greatest boon to mankind. Electric energy, he continued, with ever-increasing facility had provided light, heat, power and faster transportation.

Nowhere else in the world, Mr. Finn said, was the change more evident than it had been where low-cost Hydro power was pacing the economic and industrial development of the province.

Greatest Crisis In History

"We are faced today," Mr. Finn said, "with the greatest crisis in the history of Hydro; one of the greatest industrial crises we have yet experienced in Ontario and I am glad that the people are at last realizing that fact."

There was no man-made answer to the present situation except to the development of more and more projects, he said. One reason for the crisis, he continued, was to be found in the enormous polyglot of senseless, non-essential waste of power by the consumers of Hydro. That might be condoned when the water supply was normal but it was impracticable and even crazy at the present time, Mr. Finn stated.

He went on to say that in his experience after a great many years of contact with the public as a newspaperman that he found that the people were most willing to co-operate for the general good and for their own good if the problem were explained to them.

Necessary To Save Power

In conclusion Mr. Finn stated that, in the final analysis, it would probably be found that whatever restrictions were imposed, they would not rate as any more than petty annoyances and that they would be taken in the proper spirit. He pointed out that the men who had the job of handling the power crisis should stress that no one was trying to regiment the people but that it was absolutely necessary to save power.

M. J. McHenry, Director of Consumer Services, spoke on the seriousness of the present power situation and stressed the need for conserving electrical energy in every possible way.

"If we are to get through this fall and winter," he said, "the maximum conservation will be necessary."

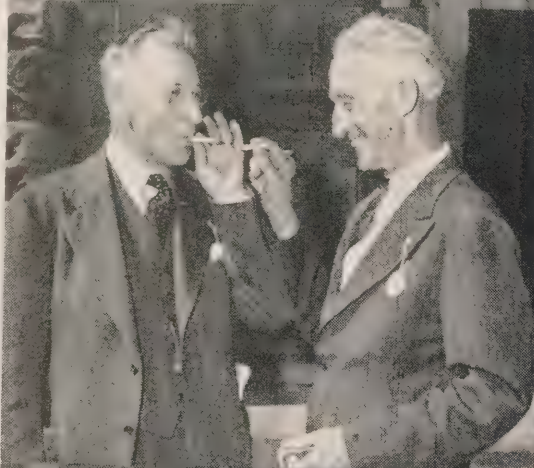
E. G. Gurnett, Consumer Service

(Continued on page 30)

MEMBERS OF the newly elected executive of District No. 6 from left to right are, front row: H. B. Tully, Picton; M. P. Duff, Belleville; T. A. Andre, Kingston; F. H. Plant, and S. W. Canniff, Ottawa; Dr. R. A. Patterson, Kemptville. Back row: J. Halliday, Kingston; and S. J. Babe, Oshawa.



WITH A little co-operation from R. O. Quick of Brighton (right), S. J. Babe of Oshawa was able to get his cigarette going during a recess at the recent District No. 6 O.M.E.A. Convention at Kemptville.



LOOKING AFTER a convention entails a lot of work. Here we have R. J. Patterson, Kemptville and W. E. Wheeler, Toronto, registering the delegates.



ANOTHER SHOT taken during a recess from the District No. 6 business sessions is shown to the right. Included in the group are D. C. Brazier of Toronto and M. W. Rogers and G. E. Findlay of Carleton Place.



THERE WAS plenty of kibitzing going on when this shot was taken. From left to right they are: D. C. Brazier, Toronto; O. H. Scott, Belleville; W. R. Mathieson, A.M.E.U.; F. A. Wale, Smiths Falls; E. G. Bainbridge, H.E.P.C.; M. W. Rogers, Carleton Place; E. V. Dyke, Smiths Falls; E. S. Frost, H.E.P.C.; R. L. Dobbins, Peterborough; N. J. Douglas, Smiths Falls.



Highly Encouraging Response To Power Conservation Appeal

By Edith B. Kent,
Hydro News

A headache though it may be, the current power shortage has shown the lengths to which co-operation among individuals can go. A survey made by Hydro News indicates that the response to the H.E.P.C.'s appeal for power conservation has been highly encouraging.

As a result of the Commission's educational campaign, people throughout Ontario are realizing that their own jobs are at stake in this battle in which the rains stubbornly refuse to fall in sufficient quantities and in the right places to supply storage water for power plants. Accordingly, the majority of consumers are making valiant efforts to curtail the use of electric power voluntarily, as well as taking the necessary cutoffs in their stride.

Industrial power users in Southern Ontario utilize approximately 70 per cent of the total supply of power available in that System. These consumers, in many cases, have arranged with their employees to shift much of the power load from weekdays to Saturdays or Sundays, and from daytime hours to the hours from midnight to 7 a.m., when the situation is less critical. Largely stemming from the educational programs carried on by many firms is the willingness of the employees to co-operate despite the temporary inconvenience.

Many firms have appointed power wardens who make the rounds at specified intervals, turning off lights and machines which may not be required and warning employees against negligence in this respect. Other reminders confronting machine-users are stickers affixed to equipment and cards attached to light switches and other electrical devices.

Many companies possess their own generators, which supply them with auxiliary power. These companies have been urged to use standby generating equipment to full capacity in order to relieve the strain on Hydro. Certain firms have installed individual switches which make it possible to keep only one light burning instead of a whole row of lights, and others have removed light bulbs to cut down on illumination.

In cases where a manufacturer is served by a special feeder line, arrangements may be made whereby the firm undertakes to comply with the regulations without the necessity of cutoffs. By the end of October, 735 industrial consumers in Toronto alone

Many Industries And Employees As Well As Other Consumers Doing Fine Job — Candlelight Dinners, Power Wardens, Contests And Efforts Of Public Spirited Citizens All Making Important Contributions In Helping Relieve Present Critical Shortage.

had arranged to be relieved of power interruptions in this way.

On the whole, industry is co-operating marvellously well. Particularly is this so in Hamilton, where not only are all firms under quota, but plant workers have been highly commended for the way in which they are co-operating in helping save power. Indeed, Hamilton's power conservation effort has been hailed as an example to other parts of the province, in that it has never been over its quota since the beginning of power regulations this fall.

Candlelight Dinners

Perhaps the most colourful method of conserving commercial power is the in-

stitution of candlelight dinners as a regular feature of a number of Ontario hotels and restaurants. This serves the added purpose of lending a little glamour and graciousness to the everyday business of living. The idea has been approved in principle by the Ontario Hotel Association, and is rapidly being adopted in many centres.

To help reduce lighting, many hotels have instructed their bellboys to ask the co-operation of guests in using as little illumination as possible. Posters in the hotel lobby and cards placed in suitable locations in bedrooms as well as notices in hotel publications continually remind the guests of the critical situation.

Cards in theatre lobbies, store windows and restaurants proclaim "We are doing our part; please do yours," and restaurant menus come in for their share of slogans. Stores in Hamilton are policed by eight commissionaires retained by the Retail Merchants Association, who report to the Association any negligence in the use of power. So far, none has been encountered.

A further boost has been given the campaign by small advertisements placed within the larger ones run in newspapers

(Continued on page 32)



LUKE MORIN, lathe operator at the John Inglis machine shop, adjusts a conservation card on his machine. Notices like this remind industrial power users to make every saving possible.

A Visit to Queenston

Hydro played host to more than fifty young people from the Woodgreen Community Centre, Toronto, on Thanksgiving Day when they visited the Queenston Chippawa power plant on the Niagara River.

These people, popularly known as the Peptomists, who are age 20 and over, are members of the young people's section of the Woodgreen Centre. With the co-operation of Rev. Ray McCleary, founder and honorary director of the Centre, the trip was arranged with the idea of giving the members of the group a first-hand insight into the operations and functions of a large Hydro generating plant.

Travelling by bus, the party stopped at Stoney Creek for refreshments and later at Niagara Falls, arriving about noon at the Queenston-Chippawa plant where lunch was served. After lunch, the young visitors were divided into small groups and conducted by guides on a tour of Hydro's largest development whose ten generating units have a total capacity of over 375,000 kilowatts or 500,000 horsepower. Going

through the powerhouse, which is 590 feet in length, the youthful visitors were obviously impressed as they looked at the giant generators, each of which weighs 690 tons. In this immense powerhouse they also saw the two service generators which supply the power required to operate the lights, cranes, pumps, elevators and other equipment in the plant.

During the tour many questions were

by
Grace J. Carter
News Editor

asked, some of them pretty tough, but the guides were able to come up with the right answers, and it was the general consensus of opinion that the visit had been both entertaining and informative. At the end of the tour Hydro's technicolour movie, "Niagara The Powerful" was

shown in the newly decorated reception room.

Now just a word about the activities of the Woodgreen Community Centre from which these young visitors came. It was officially opened in May of this year and is popularly known as the "living room for the community." It seems that about thirteen years ago when Rev. Ray McCleary became minister of the Woodgreen United Church he immediately saw the need for a community centre in this congested half-mile-square area east of the Don River and south of Dundas Street. With this in mind he arranged to acquire the property where the Centre now stands, and started a campaign to raise funds to erect the necessary building. However, with the advent of World War II the idea was shelved. After Rev. McCleary's return from overseas he resumed the campaign, and on June 6, 1947 the cornerstone was laid. In less than a year, in May 1948,

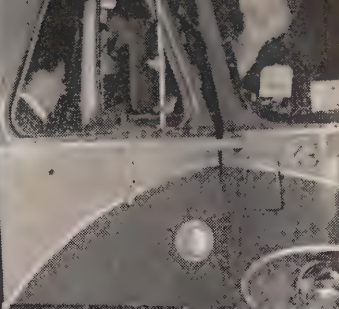
(Continued on page 30)



TAKEN ON the marble staircase of the newly decorated reception room at Queenston-Chippawa generating station, this picture shows Rev. Ray McCleary, founder and honorary director of the Woodgreen Community Centre, with members of the young people's section who visited the plant on Thanksgiving Day.



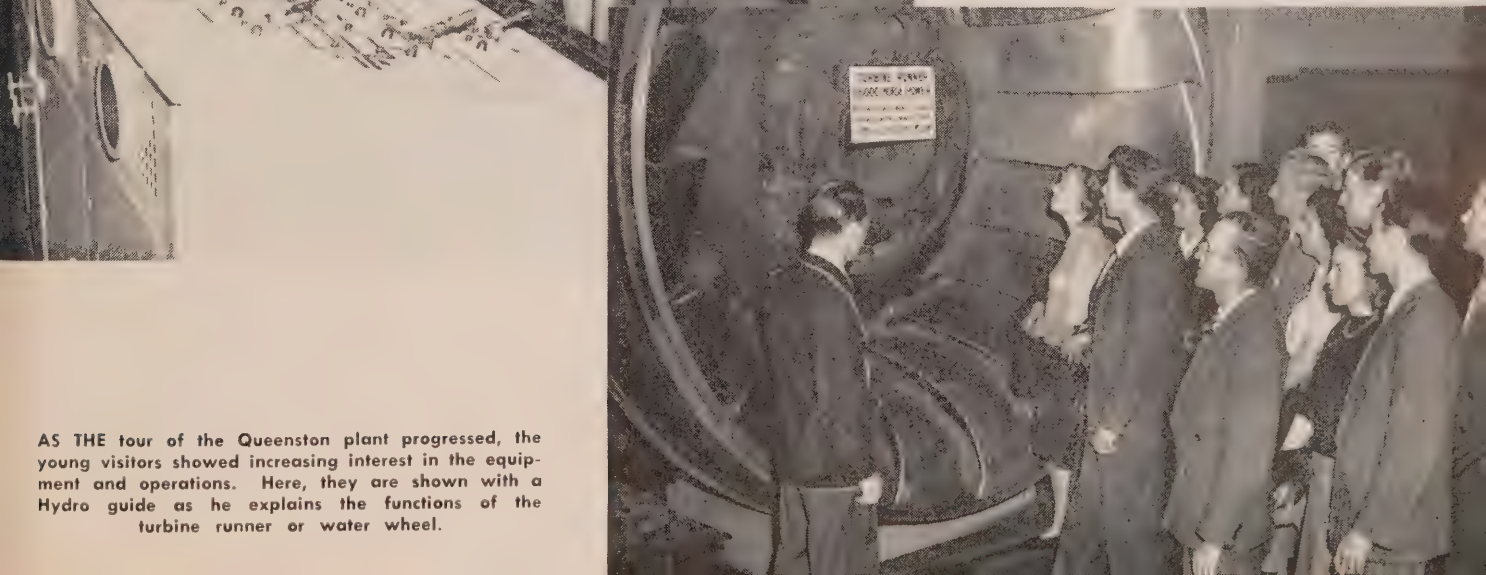
THIS PHOTOGRAPH was taken in the Queenston plant generator room where there are ten units, each of which weighs 1,000 tons and which together can generate over half a million horsepower. It shows the group beside one of the governors with the upper portion of No. 4 generator in the background.



ALTHOUGH IT was a rainy morning this did not mar the holiday spirit in which the young people's section of Woodgreen Community Centre in the east end of Toronto, started out on their bus trip to visit the Queenston generating station.



GROUPED AROUND the control panel: in the impressive-looking control room with its white panels which reach around one side of the room in a semi-horse-shoe, the young visitors evinced considerable interest in the mysterious looking switches, buttons and multi-coloured lights.



AS THE tour of the Queenston plant progressed, the young visitors showed increasing interest in the equipment and operations. Here, they are shown with a Hydro guide as he explains the functions of the turbine runner or water wheel.

POWER SHORTAGE

(Continued from page 25)

Engineer for the Ottawa Region, reviewed in brief the load situation on a regional basis and pointed out that the kilowatt-hours used by all classes of consumers had increased by leaps and bounds. He pointed out that in most cases the loads in the past 15 or 20 years in the various municipalities had increased by more than 50 percent.

F. C. Adsett, Consumer Service Engineer for the Belleville Region, discussed the increased use of domestic and small electrical appliances and pointed out how this was increasing the load and would likely continue to increase it for many years to come. He went on to say that electricity had made, and was continuing to make, an increasingly important contribution to a higher standard of living.

During the business session the following resolution was passed:

Moved by G. E. Findlay, Carleton Place, seconded by J. Halliday, Kingston: "Resolved that this meeting is in favour of frequency standardization throughout Ontario but is opposed to the allocation of cost as set forth in the Clarkson report.

"Inasmuch as the 25-cycle areas will derive most of the benefits of the change, it is the opinion of this meeting that the cost of converting 25-cycle consumer owned and municipally owned equipment should be charged to the present 25-cycle areas, and that the present 60 cycle areas should be charged only with their proportion of the cost of converting the generating and transmission equipment owned by the H.E.P.C. and the generating and transmission equipment of the Quebec power companies which is used to generate and supply power to Ontario."

The Executive for District No. 1 Eastern Ontario Municipal Electric Association elected for the coming year is as follows: President, F. H. Plant, Ottawa; Vice-Presidents, H. B. Tully, Picton, and S. J. Babe, Oshawa; Secretary-Treasurer, S. W. Canniff, Ottawa; Directors, G. S. Matthews, Peterborough, M. J. Elliott, Bowmanville, and Dr. R. A. Patterson, Kemptville.

A VISIT TO QUEENSTON

(Continued from page 28)

to be exact, a magnificent building was erected, equipped and furnished at a cost of \$400,000.

Since that time various functions have

been organized for every age group from the nursing school of 2-½ years right up to the golden age where old age pensioners have their billiard games, cribbage and so forth. There are recreational facilities including weekly dances, sing-songs, sport activities of all types and educational programs for every age group. Each group has its particular night during the week, and on Sundays a forty-piece symphony orchestra, made up mainly of members, plays in the very up-to-date gymnasium for the enjoyment of all who care to listen. The Centre boasts a children's library which is reputed to be second to none. This library is staffed by the Toronto Library Board. There is also a health clinic which is operated by the Toronto Department of Public Health.

Woodgreen Centre has proved to be a popular spot for wedding receptions, with an average of two wedding parties every Saturday since its inauguration last May. As the "living room for the community," it is undoubtedly making an all-important contribution to the welfare of the 15,300 citizens, or 3,200 families who live in 2,700 homes in the east end. It is estimated that there are approximately 4,500 children of school age and down in this congested area of east Toronto.

Hydro News was informed that the Centre will operate on an approximate budget of \$30,000 a year which will be raised by the City of Toronto, neighbours in the district, local industries and the very nominal fees collected from the members themselves.

TEAMWORK REVEALED

(Continued from page 23)

serve power quotas. He also thanked the citizens of the municipalities for the part they had played in paring their power demands to a minimum. Relations between the O.M.E.A. and the H.E.P.C. were never closer than at present, said Mr. Strike, and conditions were such that the two bodies would be drawn into closer liaison in the future. "With the co-operation of the municipalities, all our problems—and there are many of them—can be overcome," he concluded.

Increased Quotas Unlikely

Prospects of increased quotas for municipalities in the immediate future are not favourable, A. W. Manby, Assistant General Manager—Administration, told the meeting. In actual fact, he added, there was a possibility of further reductions. "Only one inch of rain fell in Quebec in September," said Mr. Manby, "which means there was virtually no run-off at all." The only alternative, he told his audience, was for each municipality not only to stay within its allotment, but to

Phyllis Foreman Elected To University Senate

Miss Phyllis L. Foreman, B.A., B.L.S., Hydro's efficient librarian, has been elected by acclamation to the Senate of the University of Toronto for the term of 1948-52, it was announced recently. She will take up her duties immediately.

The first representative of the University's Library School graduates ever to serve on the Senate, Miss Foreman graduated in 1940, having taken the elective course for special librarians.

Born in Allenford in Bruce County, Ontario, she attended public schools in Winona, Fort Erie and Preston, high school in Galt, and Victoria College, Toronto. Before taking over her present position in Hydro in November, 1941, she was employed by the Canada Life Insurance Company and the Department of Zoology at Varsity.

In 1947 Miss Foreman was President of the Toronto Chapter of the Special Librarians' Association, and is a Past President of the Library School Alumni of the University of Toronto. She also served on the Scholarship Committee of the Alumni. She is an ardent music lover and ski enthusiast, and is fond of various kinds of handicrafts, "when I have time."

As a member of the Senate, she will help determine the university's educational policy, with regard to courses, degrees and other educational matters.

Since coming to Hydro, Miss Foreman has been largely responsible for building up what is generally considered one of the finest specialized libraries in Canada. In providing general reference books and most of the current technical magazines, the Hydro library furnishes invaluable information to the members of the Commission's staff.

make a concerted effort to use less than its quota. "At present we are being asked to supply 34,000,000 kilowatt hours a day," he stated, "and our available resources can only supply 30,000,000."

Hydro's Director of Consumer Service, M. J. McHenry, told the meeting that the regional offices were now well established in their respective areas and thus the way was now clear for the elimination of much delay in dealing with the problems of municipalities.

The Rains Came

Following luncheon some of the delegates availed themselves of the invitation to do a spot of divot digging at the country club but most of the group took one look at the threatening skies and decided to keep a sheltering roof overhead. A party was conducted on an inspection of local manufacturing plants while another group was taken for a ride—on a sight-

(Continued on page 31)

International Plowing Match

TEAMWORK REVEALED

(Continued from page 30)

seeing bus—to the points of interest about the city and its environs. As things turned out it was a wise decision on the part of the non-golfers. The heavens opened up and remained open for the balance of the afternoon making sightseeing from a heated bus less hazardous than trying to follow that tiny white pellet through a wall of water.

More Stringent Regulations

At dinner, when the brethren reassembled, an extra place was added at the head table for Hydro Chairman Robert H. Saunders who had made a hurried trip from Toronto in order to be present. Just back from Washington where he had been conferring with U. S. officials on the St. Lawrence project, Mr. Saunders spoke briefly on the power situation and the outlook for the future months. He revealed that more stringent regulations for saving electricity had been drawn up and were to go into effect at once. Immediately upon conclusion of his remarks the Chairman excused himself and left for Toronto in order to keep a radio broadcast date later in the evening.

Guest speaker at dinner was the Rev. Crawford Scott of Hamilton. His theme was Canada and was given as "A Travelogue Without Tears." To hold the interest of a large audience who have just eaten a most delicious and abundant repast requires more than a little talent. It was readily obvious then that Mr. Scott is a man of truly exceptional talent. Throughout the course of his address his listeners paid rapt attention to his every word, and, from time to time, they were laughing uproariously at his numerous witticisms. He took his audience on a rapid but vivid verbal tour of Canada, outlining along the way the local traditions and colour that combine to make this land of ours great. We would be so bold as to say that there was no one in the room when Mr. Scott concluded who did not feel a deeper pride in his Canadian heritage and a resolve to see it upheld and advanced.

New Executive

For the coming year, the following were elected to the executive of District No. 6: President, J. W. Monteith, Stratford; Vice-President, C. K. Merner, New Hamburg; Secretary-Treasurer, A. E. MacIntyre, Stratford; and Harvey Hawke, Galt; D. E. Kennedy, Guelph; F. E. Welker, St. Jacobs; J. H. Francis, Tavistock; F. O. Pelz, Preston; George W. Gordon, Kitchener; directors.

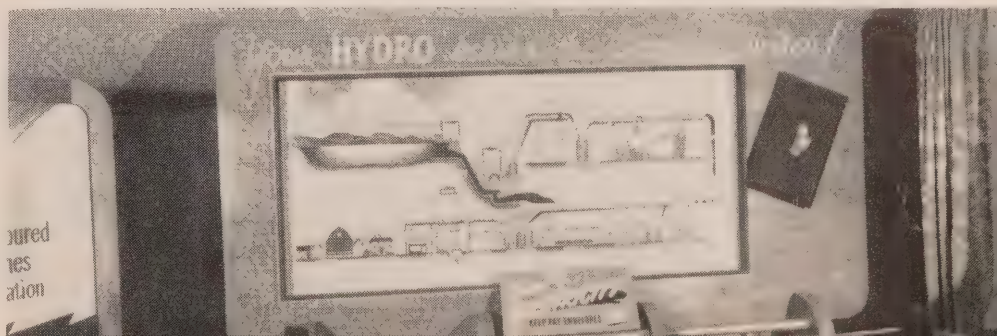


EXHIBITS AT Hydro's tent at the 35th International Plowing Match were of two main classes — conservation displays and enlarged photos of the new developments under construction. Held October 12-15, about four miles west of Lindsay, the Match had the largest display of farm machinery in its history.



WINNER OF the contest for Class 5 tractor plowing, T. P. O'Malley, R. R. #2, Teeswater, Ontario, is presented with his prize, a one-third horsepower motor, by J. A. Blay, Hydro's Manager of Promotion. Presentation was made at a banquet held in the Armouries at Lindsay.

ONE OF the animated exhibits in Hydro's tent is pictured below. It shows the various stages in the production of electricity — generation, transmission, and distribution to the ultimate consumer. Members of the Commission staff were in attendance at the exhibit to provide information.



Toronto's Power Conservation Committee



SERVING VOLUNTARILY and acting in an advisory capacity, a number of Toronto business men and women have been rendering an important public service as members of the Mayor's Committee on power conservation. As a result of the untiring efforts of this group, helpful saving of electricity has already been effected along many lines. The above illustration shows some of the members of the committee. They are, front row, left to right, A. E. Hayward, Secretary; F. D. Tolchard; Mrs. C. D. Brunke; H. E. McCallum, Mayor; G. W. Lawrence, Chairman; A. B. Cooper. Back row, left to right, W. J. Wylie; H. M. Tedman; F. G. Brand; R. A. Stapells; T. H. Bartley; D. G. Moffitt, Public Relations; F. C. Hamilton; A. H. Kirby.

ENCOURAGING RESPONSE

(Continued from page 27)

and magazines by commercial firms. These have been a tremendous help in keeping the program before the public, as they tie in with the advertising campaign carried on by the Hydro Commission itself. Of great assistance also are conservation messages run at their own expense by many advertisers. Radio advertising, in the form of spot and flash announcements, has been supplemented by mention made by various news commentators of the power shortage and diverse ways of meeting it.

Radio Station Conducts Contest

Also in the radio field, one Toronto station is carrying on a contest among its employees to determine which department saves most power. The contest, in which a \$25 prize is offered monthly, is to be run all winter, or for as long as power regulations are in effect. At the end of the first month, consumption had been reduced by 70 per cent, the station's officials announced.

To determine which department should

receive the award a member of the station's staff makes three or more rounds a day, ticking off in a little notebook each light left burning unnecessarily. At the end of the month, the department with the fewest ticks is awarded the prize. If larger firms were to adopt this practice, more than one checker would probably be necessary.

Special mention should be made of the efforts of the Mayor's Committee of the Power Conservation Campaign of Toronto. Made up of local businessmen who give their services voluntarily, this committee acts as an advisory board to officials of the Toronto Hydro-Electric System, suggesting methods of conservation and considering the practicality of suggestions already made.

As a result of the committee's efforts, store lighting in Toronto has been drastically reduced and street lighting cut down to the minimum required by safety considerations. In addition the Toronto Transportation Commission has agreed to curtail its lighting and heating, and on some routes to substitute diesel-operated buses for street cars. Other committee negotiations are now in progress.

Members of the committee are: Chairman, G. Lawrence, President, Sangamo Co. Ltd.; Secretary, A. E. Hayward, on

loan by T.H.E.S.; Public Relations, D. G. Moffitt, on loan by T.H.E.S.; H. E. McCallum, Mayor of Toronto; F. D. Tolchard, General Manager, Toronto Board of Trade; A. B. Cooper, President, Ferranti Electric Ltd.; W. E. Leonard, Chairman, Toronto Hospital Council; A. H. Kirby, Building Owners & Managers Association of Toronto; L. L. Hartman, Retail Dealers Association; E. E. Ritcey, Vice-President, Dominion Wheel & Foundries, Ltd.; W. J. Wylie, Manager, Power Sales Department, T.H.E.S.; T. H. Bartley, General Manager, Toronto Industrial Commission; E. R. Lawler, District Manager, H.E.P.C.; H. M. Tedman, J. J. Gibbons, Ltd.; R. A. Stapells, J. J. Gibbons, Ltd.; H. D. Rothwell, H.E.P.C.; Mrs. Clara D. Brunke, Local Council of Women; A. Skeans, Board of Education; F. C. Hamilton, Mayor's office; G. T. Manes, Mayor of Leaside, W. E. P. Duncan, Chief Engineer, T.T.C.; F. G. Brand, Secretary, Ontario Trades and Labor Congress, who is substituting for W. Jenoves, Chairman, Toronto District Labor Congress.

Extensive Educational Campaign

An extensive educational program has been undertaken by the Ontario Hydro Commission to inform the domestic consumer of the seriousness of the power

(Continued on page 33)

NEWS IN BRIEF

Two Indian Engineers To Train With Hydro

Two Indian engineers with experience in the power supply industry will arrive in Toronto shortly to train with The Hydro-Electric Power Commission of Ontario, it is announced. They are two of a group of seven who will receive training in Canada, the United States and the United Kingdom in the administrative and commercial branches of the electrical supply industry.

Volunteers Helping Power Conservation

Approximately 100 volunteers are helping pace observance of power-saving restrictions in Rural Western Ontario according to R. M. Laurie, the Commission's Regional Manager in that area.

Mr. Laurie urged farmers to follow the example of urban industry and shift as much as possible of their work from days to nights and weekends.

Meeting with 25 area managers, he stressed the gravity of the power shortage and said that cutoffs would be necessary if the restrictions were not observed. Farm areas, he said, were subject to the same regulations as urban areas, and the same conservation measures were required.

Power Supply Tighter In United States

A nation-wide survey of the electric utility industry in the United States, conducted by the Edison Electric Institute, shows that the supply of power in that country will be even tighter this winter than last year.

Reserve generating capacity is expected to be only 4 per cent in excess of the demand in December, the high point of annual consumption as compared to an excess of 5 per cent in 1947. If bad weather or equipment breakdowns occur, it may be necessary to take conservation measures, the Institute reported.

CONSERVATION APPEAL

(Continued from page 32)

shortage and the ways in which he or she can help meet it. Cards, folders, stickers and blotters accompany electric bills and are dropped in the door, newspaper advertisements, sound trucks, and radio are being used to make the seriousness of the present shortage known and pay envelopes contain pamphlets outlining conservation ideas.

Housewives, as the principal domestic power users, are specially asked to be careful about lights and electric appliances. Such devices as turning on only one light in the living-room are recommended, as are cooking whole meals in the oven or in a pressure cooker, reducing washing-machine time by soaking clothes beforehand, and so forth. Ironing time may be reduced by leaving bed linen and towels unironed, pressing rayons and similar materials while the iron is heating up or after it is turned off, ironing five or six handkerchiefs at a time, and other ingenious methods.

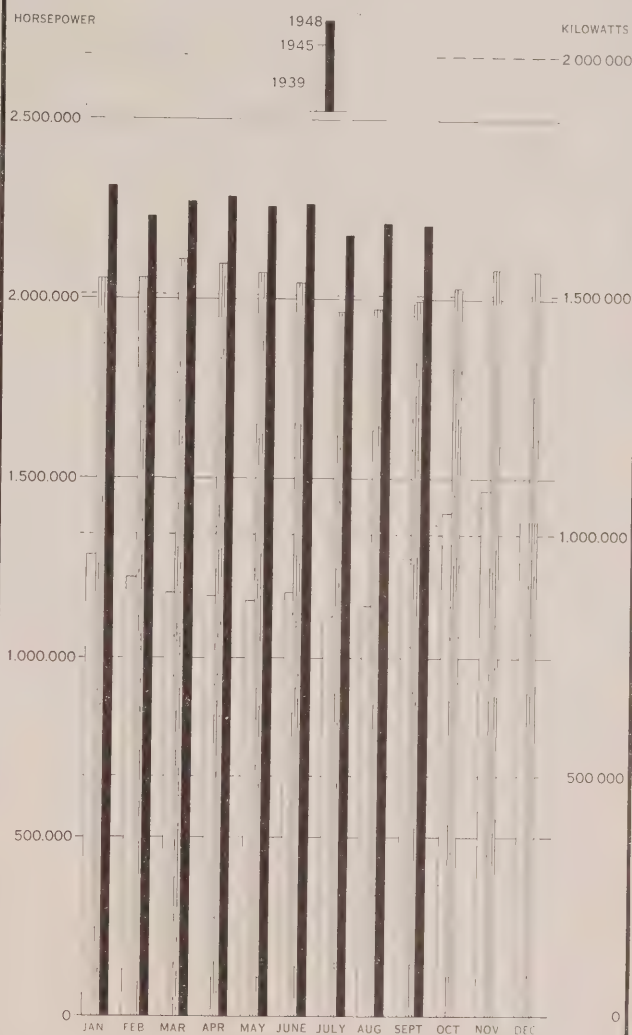
Children, too, share in the responsibility. Some Hamilton schools provide buttons stating "Our home saves electricity" and requiring the child to act as power warden in his own home. In other municipalities schools furnish messages for the child to read to his parents at the dinner table, and others are sponsoring contests for the home saving the most electricity.

In many communities the Boy Scouts and Girl Guides have been authorized to act as unofficial junior power wardens in their own districts, observing homes from the outside to check on lights burning unnecessarily.

Thus, in all fields of power consumption, reports indicate that highly commendable efforts are being made to meet the present shortage. The situation, however, is still critical as indicated by the power cutoffs, and, therefore, a still greater all-out voluntary effort will be necessary in order that maximum employment and production may be maintained.

SOUTHERN ONTARIO SYSTEM EMBRACING NIAGARA, GEORGIAN BAY AND EASTERN ONTARIO DIVISIONS

PRIMARY LOAD



POWER DEMANDS AND TOTAL GENERATION

AREA SERVED BY	MAXIMUM 20-MINUTE PEAK KW		PER CENT INCREASE
	SEPTEMBER 1948	SEPTEMBER 1947	
PRIMARY DEMANDS			
ACTUAL LOADS PLUS CUTS			
SOUTHERN ONTARIO SYSTEM	1,878,851	1,833,391	+ 2.5
THUNDER BAY SYSTEM	121,475	113,170	+ 7.3
NORTHERN ONTARIO PROPERTIES	207,593	183,011	+ 13.4
TOTAL	2,207,919	2,129,572	+ 3.7
TOTAL GENERATION — INCLUDING POWER PURCHASED			
SOUTHERN ONTARIO SYSTEM	1,647,591	1,709,391	- 3.6
THUNDER BAY SYSTEM	117,575	111,970	+ 5.0
NORTHERN ONTARIO PROPERTIES	243,048	210,551	+ 15.4
TOTAL	2,008,214	2,031,912	- 1.2

LaCave Rapids in its picturesque setting of hilly terrain is the site of another Hydro project which will probably be in operation by December, 1951, with an estimated capacity of 200,000 kilowatts (264,000 h.p.). LaCave Rapids are on the Ottawa River about six miles north of Mattawa.



HYDRO News



EVEN SANTA'S CONSERVING

21



Once Again At Christmas

A CHRISTMAS CAROL

Used out by the apple sauce and mashed potatoes, it was a sufficient dinner for the whole family; indeed, as Mrs. Cratchit said with great delight (surveying one small atom of a bone upon the dish), they hadn't ate it all at last! Yet every one had had enough, and the youngest Cratchits in particular, were being changed by Miss Belinda, Mrs. Cratchit left the room alone—too nervous to bear witnesses—to take the pudding up, and bring it in.

Suppose it should not be done enough! Suppose it should be done in turning out! Suppose somebody should have got over the wall of the back yard and stolen it, while they were merry with the goose, a supposition at which the two young Cratchits became hoarse! All sorts of horrors! The pudding was out of the copper. A smell like a washing day! That was the cloth. A smell like an eating-house, and a pastry cook's next door to each other, with a laundress's next door to that! That was the pudding! In half a minute Mrs. Cratchit entered, flushed, but smiling proudly, with the pudding, like a speckled cannon-ball, so hard and firm, blazing in half of half-a-quarter of ignited coals, and daylight with Christmas holly stuck into the top.

On a wonderful pudding! Bob Cratchit said, and calmly too, that he regarded it as the greatest success achieved by Mrs. Cratchit since their marriage. Mrs. Cratchit said that now the weight was off her mind, she would confess she had had her

THE SECOND OF THE THREE SPIRITS
doubts about the quantity of flour. Everybody had something to say about it, but nobody said or thought it was at all a small pudding for a large family. It would have been flat heresy to do so. Any Cratchit would have blushed to hint at such a thing.

At last the dinner was all done, the cloth was cleared, the hearth swept, and the fire made up. The compound in the mug being tasted and considered perfect, apples and oranges were put upon the table, and a shovel-full of chestnuts on the fire. Then all the Cratchit family drew round the hearth, in what Bob Cratchit called a circle, meaning half a one, and at this and a custard-cup without a handle.

These held the hot stuff from the mug, however, as well as golden goblets would have done, and Bob served it out with beaming looks, while the chestnuts on the fire spluttered and crackled noisily. Then Bob proposed.

"A Merry Christmas to us all, my dears. God bless us! Which all the family re-echoed.
"God bless us every one!" said Tiny Tim, the last of all. He sat very close to his father's side, upon his little stool. Bob held his withered little hand in his, as if he loved the child, and wished to keep him by his side, and dreaded that he would be taken from him.
"Spirit," said Scrooge, with an interest he had never before, "tell me if Tiny Tim will live."



THE HYDRO - ELECTRIC POWER COMMISSION OF ONTARIO

620 UNIVERSITY AVENUE, TORONTO

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THE FRONT COVER

FOR many years Santa Claus has been working for the Commission, but it is not our intention to divulge his name at this time. We did manage to persuade him to be the subject for this year's Christmas cover and, being a good Hydro man, he symbolized the need for conservation by using a candle. If you are interested in a little guessing game about Santa's identity turn to the This And That page.

Volume 35

Number 12

DECEMBER, 1948



Christmas Message . . .	2
Page Three	3
Yeoman Service	4
British Plant Opened . .	9
Queenston Reception Room	10
Review of Year	13
This and That	14
Hydro Home Forum . . .	19
District No. 5, O.M.E.A.	20
Tunnel Development . .	22
Poster Contest	25
Night Before Christmas .	26
Dr. Urquhart's Page . .	28
Hydro At "Royal" . . .	29
Lighter Lines	30
Monthly Load Summary .	31
Municipal Loads	32



Christmas 1948



Geo H. Challis



Robert W. Kunda



W. Ross Stinson



D. P. Hearn

Christmas comes again to bring its enduring message of hope, peace and good cheer to all people of goodwill. And at this time when many parts of the world are still beset by strife, suffering and suspicion, the Christmas message assumes an even deeper significance in the minds of all whose lives are dedicated to the building of a better world in which men of all tongues can find a common ground for understanding. And so, with their fellow Canadians everywhere, members of the great, far-flung Hydro family in Ontario unite to pause briefly at this time in solemn contemplation of events, past and present, before going forward with hope and faith renewed to meet the challenge of the New Year. It is the sincere wish of the Commission and management, that all who serve Hydro—on the Commission staff and in Hydro municipalities—may enjoy the most bountiful of blessings and good cheer during the Christmas Season and throughout the coming year.

* Page Three *

CHRISTMAS IN CANADA

Once again the bells are ringing out their message of "Peace on earth to men of good will." To those who have ears to hear Time has not muted their recurrent appeal, which down through the ages since that first Christmas Morn has set man's heart aglow and opened his eyes to the vision of an exalting hope and a new freedom.

Christmas is traditionally regarded as a time when the Spirit of Evil is laid and Goodness particularly manifests itself. As Shakespeare expressed it:

*The nights are wholesome, then no planets strike;
No fairy takes, nor witch hath power to charm,
So hallowed and so gracious is the time.*

Undoubtedly, Christmas is about the only occasion when most of us think wholeheartedly about others. And because of this casting aside of the cloak of selfishness we enjoy our Yuletide vacation more than any other holiday in the year. An added relish is given to our own Christmas cheer because we feel we have contributed in some way, with the means at our command, to the happiness of others less fortunate than ourselves. It may have been a donation to a worthy charity in our midst. It may have been a dollar quietly slipped to a deserving person whom we did not detain for a moralizing lecture. Perhaps it was a gift sent to brighten the eyes of a child, so much like our own, in some war-devastated country overseas. Possibly it was just a card sent to someone whom we had long neglected, or a sincere "Merry Christmas" exchanged with a neighbour, with whom, ordinarily, we imagine we have little in common. Whatever it may have been, a chord has been struck which reminds us we are all akin and that the truest satisfaction is derived from sharing our joys with others.

All in all, Canada is a highly favoured land. Everywhere within its boundaries there is comparative abundance and prosperity. Few homes will be without a Christmas tree for the children, and Yuletide can be observed by most families with all its appropriate festivities. In the cities the stores are displaying gifts that are almost "prewar" in their range and variety. If it were not for the troubles abroad everything would contribute to remind us of the "good old days." Perhaps it would be better for a short space to hark back to them. Perhaps it would be a renewing of our faith in our country and its democratic institutions as well as a sign of gratitude to Providence if we forgot for a while to worry about the "bad chaps" and the next war and enjoyed this Christmas in a spirit unfettered by harassing doubts or craven fears for the future.

So, Hydro News wishes a really "Merry Christmas," to all its readers. And may the New Year bring lasting peace, happiness and prosperity to all people in all lands.



A Yeoman Service

by

Harry M. Blake
Hydro News

Shakespeare's "sunburnt sicklemen, of August weary" were typical of harvesters throughout the world until well on into the Victorian era. Reaping a field of wheat, oats, barley or flax with a sickle, or even with a cradle, was a punishing job. Behind the reaper came a man, or it might be a woman, with a long, wooden-handled rake, gathering up the cut stalks and binding them into sheaves. Working in this way from daylight to dark, two experienced gleaners might cut and stook four acres of grain a day. The average performance was

less than three acres. Afterwards, the sheaves were loaded on wains or wagons and transported to the granary to be threshed out by flails or horse-driven sweep power. The poets went into ecstasies over the "golden grain" and the "threshing floor," but they were not farmers.

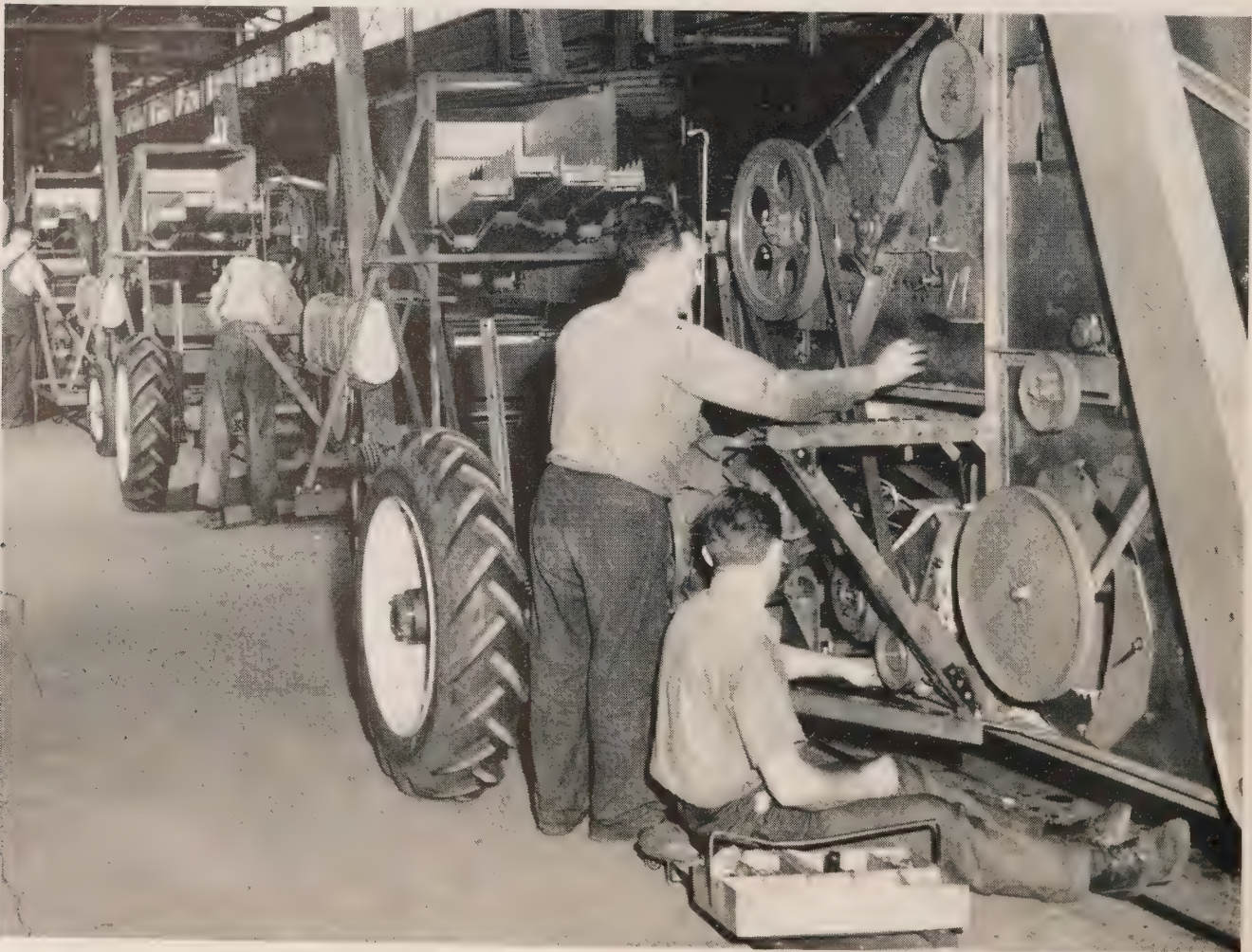
Today, a self-propelled combine machine, driven by one man, will harvest 50 acres of grain between sun-up and sun-down. It will cut and thresh enough wheat in eight hours to make 55,000 loaves of bread. With the prevailing scarcity of farm labour and millions throughout the world dependent upon food production in Canada and the United States, a highly important service is being rendered by such machines whose manufacture is being facilitated and speeded-up by the use of electricity.

Among the foremost manufacturers of combines, and other farm machinery, is the Massey-Harris Company Limited, which last year celebrated a century of achievement in its particular field. In addition to the "home" group of factories in Toronto, Brantford and Woodstock, Massey-Harris operates plants in the United States, England and France and holds an interest in "Safim," said to be the largest manufacturer of farm equipment in South Africa. In Australia a similar association exists with H. V. McKay Massey-Harris Proprietary Limited.

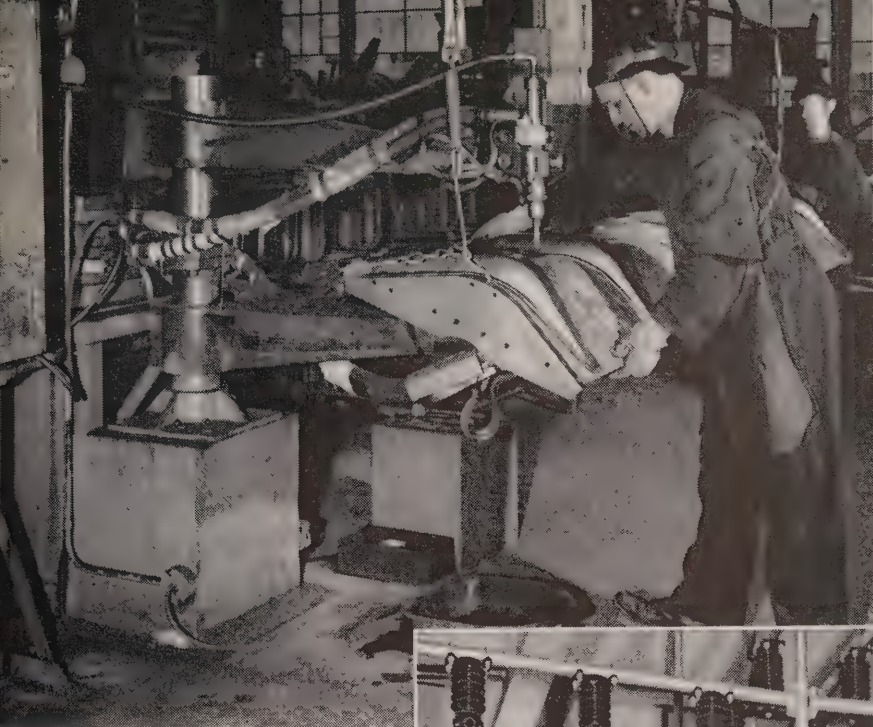
Growth of Implement Industry

Daniel Massey, at Newcastle, and Alan son Harris, at Beamsville, Ontario, were among the first to set up farm imple-

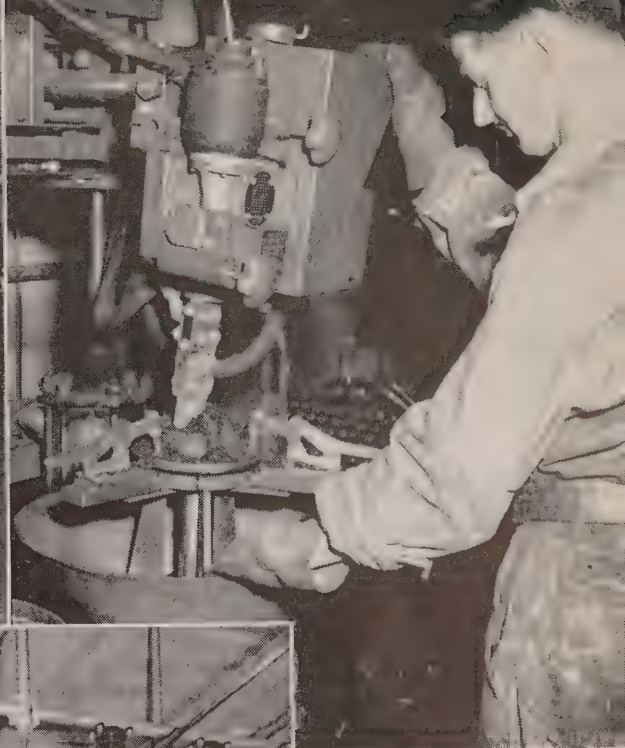
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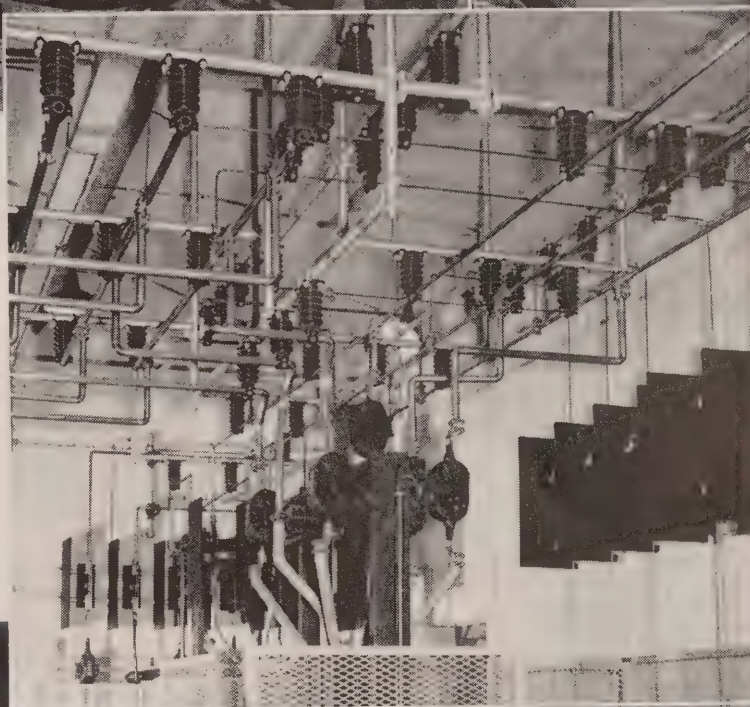
SELF-PROPELLED COMBINE machines, which both cut and thresh the grain, are lightening the labours of farmers in 40 countries of the world. The assembly line at Massey-Harris extends for nearly 200 yards. Electrical controls regulate the movement from station to station as the combines are built up.



TOP LEFT—Hydro power at work spot-welding parts of a combine.

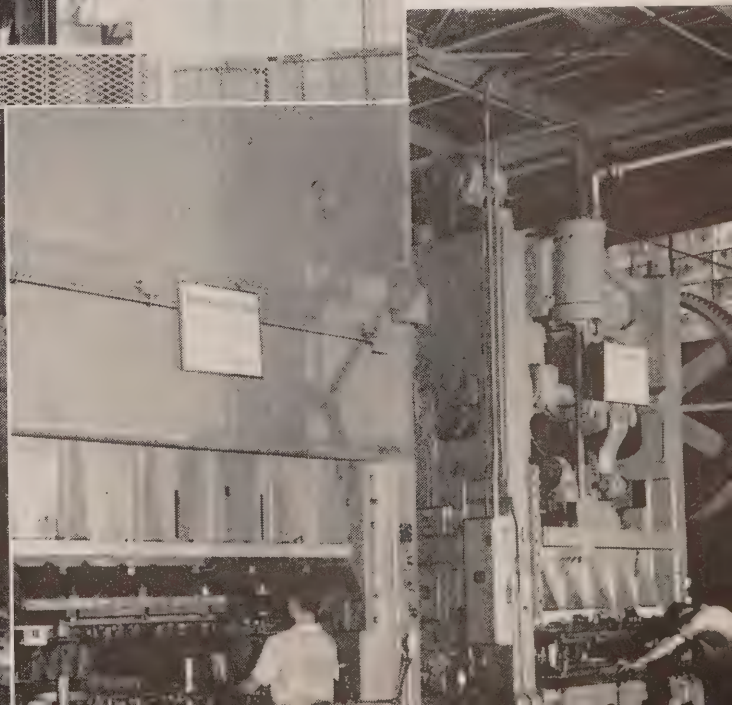


TOP RIGHT—This new type of arc-welding machine provides an electric heat stroke of 12,000 amperes.



CENTRE—The main switchroom for the Toronto plant.

LOWER LEFT—Sizzling hot and ready for the hammer. Thousands of plowshares are turned out at the completely mechanized foundry in Brantford.



LOWER RIGHT—The operations of the giant presses in the combine assembly building are all electrically controlled.

A YEOMAN SERVICE

(Continued from page 4)

ment foundries in Canada. From small beginnings these enterprises grew to impressive industries. Before Confederation, both firms were turning out horse-drawn mowers and reapers and a varied array of cultivating implements. While primitive in design compared with modern mechanized agricultural equipment, these machines represented a revolution in the tools of husbandry, which, except for improvements in their forging, had hitherto undergone little change down through the ages.

The year 1879 marked the establishment by the Massey Company of its factory in Toronto. The firm of A. Harris, Son and Company was now quartered in Brantford. It was from these headquarters that production of Canadian farm machinery on a mass production basis was initiated to satisfy both an increasing interest abroad and the new demand from our own North-West.

Fully a decade before the opening of Manitoba to farmer settlement the two enterprising Canadian companies had gained a foothold on the European market, and the Massey and Harris companies decided to pool their resources and carry on together.

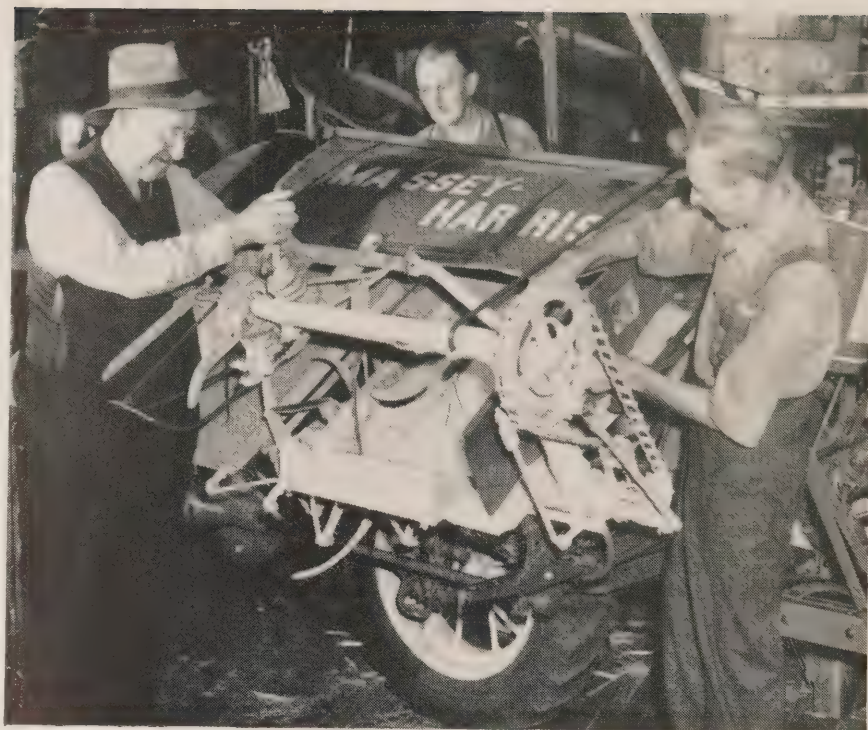
Amalgamation was effected in 1891, and the new organization found itself in a position not only to advance its standards in Europe but to extend its business to other parts of the world.

Increased Power Demand

For many years, and particularly since the war, the electrical requirements of Massey-Harris have been rapidly mounting. Through the good offices of John Martin, the company's Director of Public Relations, Hydro News was afforded the opportunity of learning just what electricity means to an enterprise engaged in the mass production of modern mechanized farm equipment.

The buildings included in the administration headquarters, offices and plant of Massey-Harris in Toronto range along both sides of King Street West for a total distance of several average city blocks. Together, they cover over 1,500,000 square feet of floor area. Fronting the new Engineering, Research and Sales buildings is the showroom, said to be one of the largest and most modern of its kind in North America.

The Toronto plants use over 50,000 tons of steel a year and about 20,000 tons of cast iron. Most of the sheet steel goes into the fabrication of the combines and is conveniently stored at the receiving end of the new building. Hence it



GIVING THE finishing touches to the assembly of a binder at the Market Street plant in Brantford are (left to right) Bert Dredge, W. Cole and Art Williams. Their combined service with Massey-Harris totals 117 years. Mr. Dredge has demonstrated farm equipment in most parts of the world, including Russia in the days of the Czar!

passes to the primary departments for cutting, welding and fitting. These sections, as well as those which deal with material received from the machine-shop and foundry, are so arranged as to ensure an uninterrupted flow of the various machine parts and equipment to the proper stations on the assembly line as the combines are built up. An elaborate system of monorail conveyors carries materials from section to section with a minimum of handling.

Post-War Power Loads

The modernization of the Toronto plant has necessitated not only the introduction of many new electrical controls but also the use of electric power with respect to quite a number of factory processes. From John H. Buttery, Assistant Works Manager, we learned that the average Hydro power load had increased from 854 kilowatts in 1939, through approximately 2,000 kilowatts in 1945, to about 3,450 kilowatts in 1947. In 1939, there were 144 electric motors in operation; in 1947 there were 1,130 running. The average monthly consumption of kilowatt hours during last year showed an increase of more than 140 percent over 1939 and of about 50 percent over 1945. The increase of production which the demands of agriculture have created since the war are definitely reflected in the number of men employed.

According to Mr. Buttery, there are now approximately 5,000 on the company's Toronto payroll—an increase of about 1,500 over the number recorded in wartime.

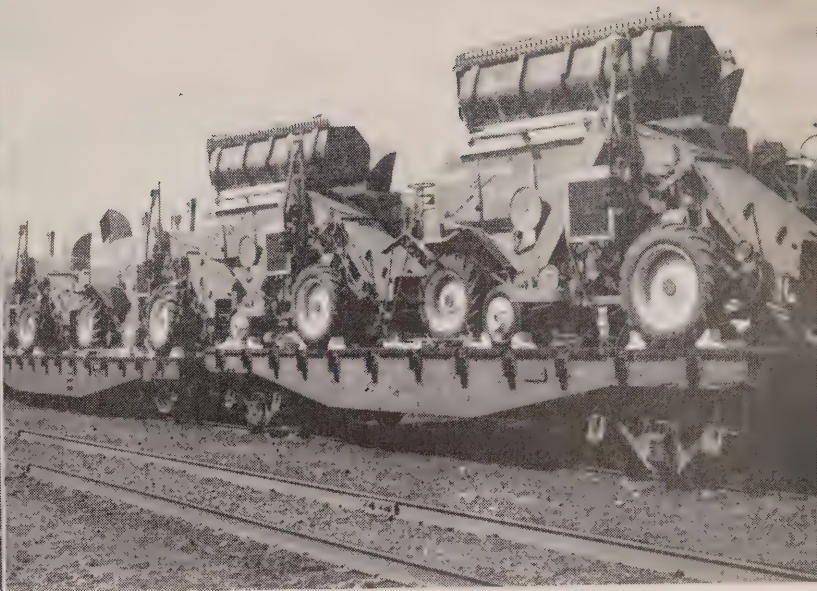
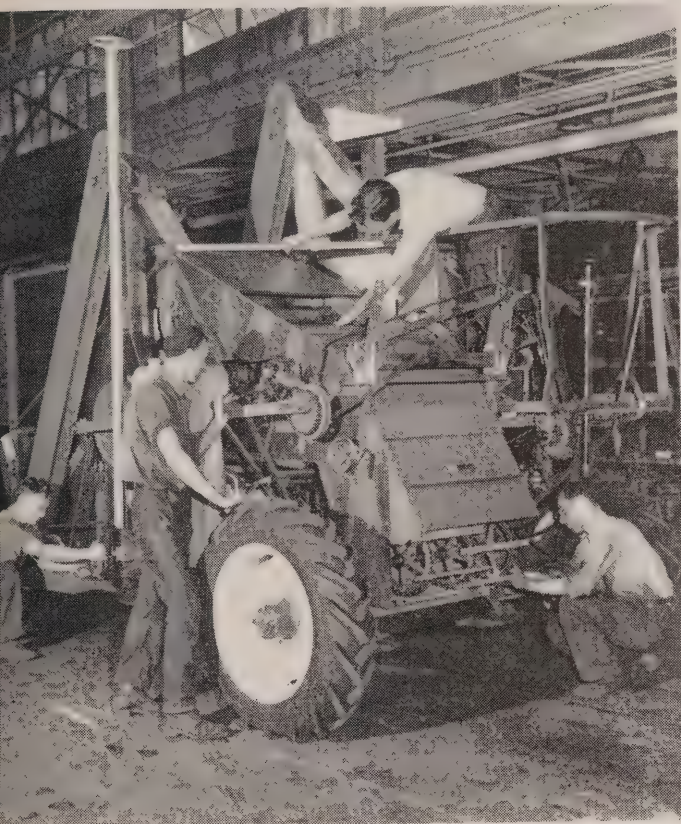
At the time of our visit the company had just completed a \$225,000 program in connection with its power distribution system. Power comes into the main switchroom at 13,200 volts from the Toronto Hydro-Electric System. From the main circuit breakers there is a branching into east and west loops, and without any voltage reduction, the current is conveyed in underground cables to six substations where it is stepped down to 550 volts for distribution in the various sections of the plant. Featuring the switchroom equipment from a safety point of view are the disconnecting switches. These are mechanically interlocked with the oil circuit breakers, safeguarding against any faulty operation that might endanger the operator or damage equipment.

Uses of Electricity

At the Toronto plant electricity is used principally in high frequency manufacturing operations, in spot welding, in metal hardening, in silver soldering and for operating the air compressor pumps. It also starts, controls and regulates a vast number of operations in which other

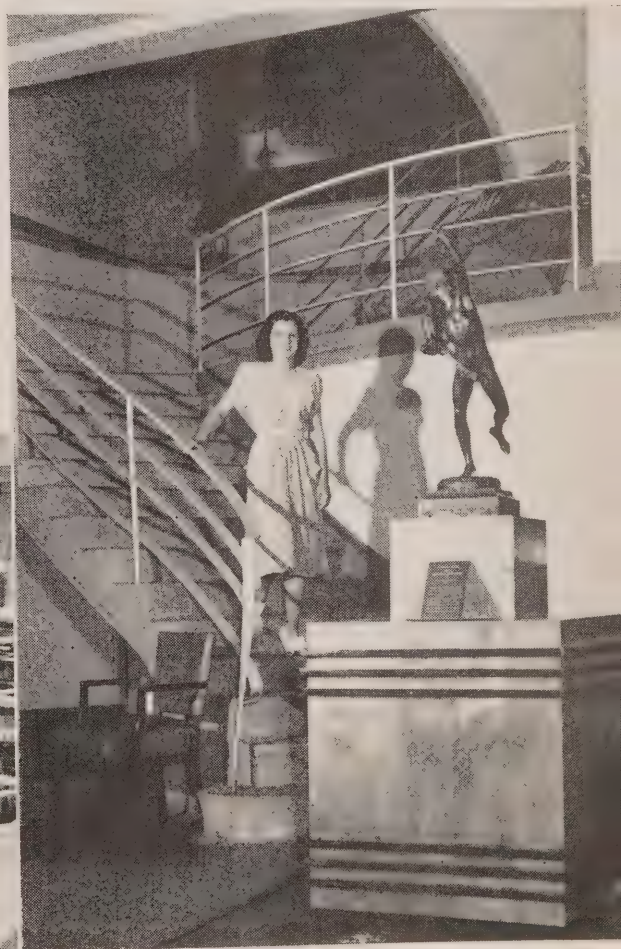
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CHECKING OVER a combine on the assembly line. Most of the mechanism has already been installed.



EN ROUTE to the Canadian North-West for next year's harvest, these impressive-looking machines will cut and thresh enough wheat in a day to make 55,000 loaves of bread.

THE NEW showroom of the Massey-Harris Company in Toronto is said to be the largest and most modern in the farm implement industry of North America. Its spaciousness permits the display of agricultural machinery and equipment designed to meet both the demand of Canadian farmers and the special requirements of markets abroad.



AT THE foot of the winding staircase is the "Vainqueur du Coq," the cherished prize won by the Toronto Massey Company at Noisel, France, in 1889.

A YEOMAN SERVICE

(Continued from page 5)

forms of power are employed.

In the compressor room there are four synchronous motors. Two of these are of 100 horsepower, one of 200 horsepower and the other of 250 horsepower capacity.

Passing on to where the silver soldering operations were being carried out, we travelled through a maze of passageways, on both sides of which huge quantities of materials of varying description were stored.

In the Stock Cellar

"This is the stock cellar," Mr. Buttery explained as we hurried along. "After the steel or the steel parts for fabrication are received, they first go to the shears and the press department. Anything requiring drilling or reaming is passed on to the machine shop. Certain other parts go to the heat-treating department. Then everything is brought here, whence it is ordered out as required to the different assembly departments. Cast iron parts are received at the west gate in proximity to the machine shop where they go for lathe and other operations. Then they come here. Parts for the combines are tied in bundles according to assembly positions and delivered to the central warehouse on the north plant side" . . . We had to lengthen our step so as not to miss the thread of our conductor's discourse . . . "Cold roll steel for the manufacture of shafts, etc. is unloaded in No. 7 Building. It goes to the cut-off saws, then to the automatic" . . . We lost the noun as we turned a corner . . . "It then follows the same procedure as the steel or cast iron" . . . We swung around to a staircase, and the writer had a narrow escape from collision with the ferrules of the tripod which the Commission's photographer was carrying at the "trail."

At the top of the stairs we found ourselves in the Silver Soldering department. Here, on each machine, 20 kilowatts of Hydro power were at work fusing together the sprockets for the shafts of tractors. On the other side of the room was a new electric arc welding machine. It was used, we were informed, for the rear axle of the "Pony" tractor and the triple sprocket of the combine.

"These parts," the foreman told us, "used to be made out of a solid piece of steel. It was a more expensive job and they were more likely to break. The new machines—there are two of them—bring into play a 12,000 ampere arc. Where speedy performances are required, they have many advantages over the ordinary arc welders."

Modernized Machine Shop

In the foundry, itself, apart from the

POWER FOR MINING

An important page in the story of man's mastery of the north was completed on October 4, when the Snare River storage and power project was officially opened. Although small in comparison with Canadian hydro projects generally, the Snare River development is now producing 6,250 kilowatts (8,350 hp). Power from the project is going to Yellowknife gold mining area. The Canadian Department of Resources hopes that Snare River is only one of a series of such developments that will be built in the Northwest Territories.

necessary lighting and the power required to operate the overhead cranes, electricity is largely confined to controls. We passed over to the Research Engineering building on the other side of King Street. Here is established what is said to be one of the most modern machine and blacksmith shops in Canada. Light is admitted through 1,760 panes of glass. During our visit, made in daytime, there was no artificial illumination in evidence at all, and we were told that during the hours of darkness each alternate fluorescent unit was turned off, with a very considerable saving of electricity.

Electricity is the bellows for the forge fires in the smithy. We watched the electrically-controlled oxyacetylene flame-cutters at work and an hydraulic press, with its 50 horsepower motor-drive in operation. There are 35 other electric motors in this section, ranging in capacity from 1½ to 20 horsepower.

In the Combine Building

In the primary departments of the combine building, giant presses were at work and arc and spot welders were busy preparing the steel parts for the assembly line. The foundations of the biggest all-steel press are laid 11 feet below the flooring. It has a capacity of 300 tons. Another imposing piece of machinery is the hydraulic drawing press. This has a drawing capacity of 500 tons. Its variable stroke pressure is regulated by electric controls. In addition to the two 12,000-ampere special machines to which reference has already been made, there are 125 normal type, and 100 300-ampere arc-welders in the Toronto plant, each driven by a 20 horsepower motor. Arc-welding is used for joining heavy materials and spot-welding for bringing lighter parts together. We watched the spot-welders at a 550-volt machine as they joined the parts of a threshing table.

The assembly line for the self-propelled combines is 526 feet long. The completely welded frames are rolled on dollies from

the primary department to their position at Station No. 1, where axles and motor mounting brackets are installed. At Station No. 2 the wheels and motor are delivered by means of monorail and gravity roller conveyors from the nearby motor tune-up and wheel assembly sections. Passing on from station to station, the various sheet metal assemblies, threshing cylinder assembly, motor differential and transmission assemblies are added until the machine takes shape as a grain cutting and threshing unit. Movement of the line is controlled electrically from a centrally-located master panel. Emergency stop and start buttons are located at each of the 17 stations. Five one-ton electric cranes are employed in the lifting and installation of the motors and heavy assemblies.

Hydro Controls Paint Job

There are two paint jobs. Most of the parts and equipment of the combine are painted before assembly, and finally a brilliant, fast, red finishing coat is given the complete machine. The sub-assembly parts, moving on a continuous conveyor system, are first washed and then dipped in paint tanks. After dipping, they pass to an aluminum drying-oven. At the entrance to this chamber an "electric eye" controls the spacing of the loads and prevents any jamming. The final "overall" painting is carried out in two spray booths just beyond the final station in the assembly line. The machines are driven from this station under their own power. The spray booths are the new down-draft water-wash types, with open steel grille covering the floor pit. High velocity electrically-driven suction fans create an airflow which carries off, through the flues, all excess spray and fumes. After the paint is dry—the process takes only 20 minutes—the combines are ready for shipping.

Hydro's last function is to provide the power for the 10-ton crane which loads the combines on the railway flat cars which convey them to all parts of Canada and the United States. Combines for overseas are partially dismantled and specially crated. Shipments of this type of mechanized agricultural equipment are now being made to 40 countries.

A Mechanized Foundry

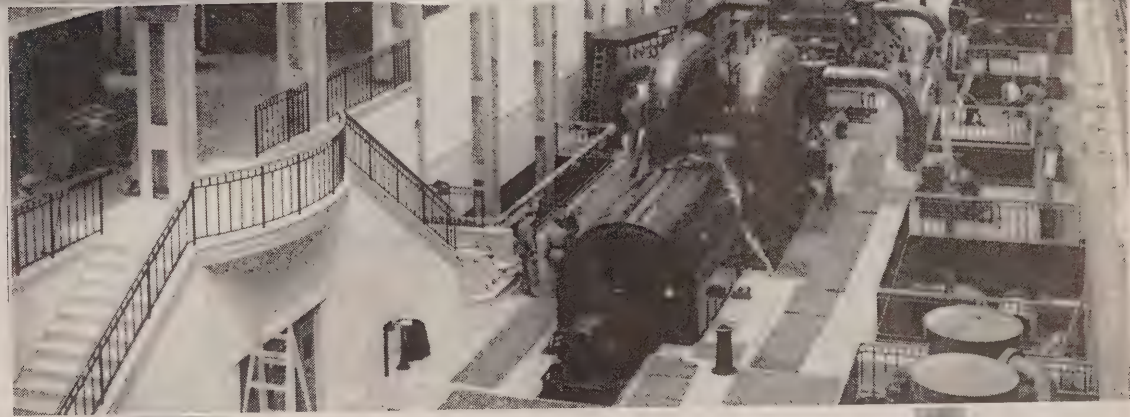
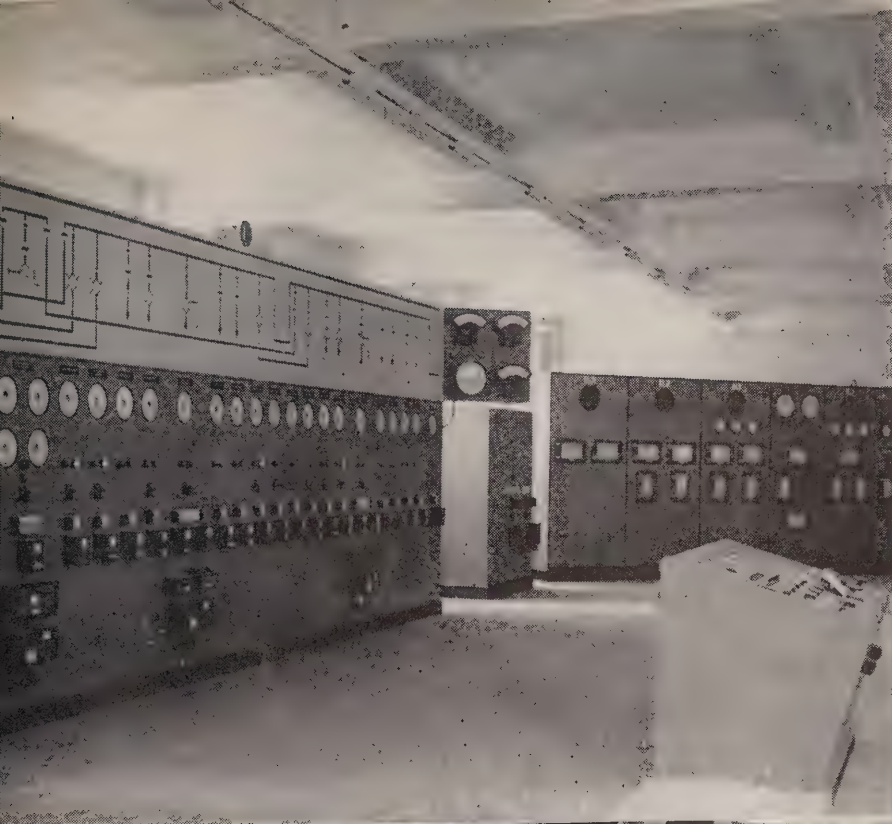
The Brantford group of Massey-Harris comprises the Market Street plant and the Verity Works with its completely mechanized foundry. Together they cover approximately 1,000,000 square feet of floor space.

The Market Street factory specializes in mowers and binders and also turns out a good deal of miscellaneous agricultural equipment. We were surprised to discover that they were still making sleighs there and that there was quite a demand for this type of conveyance among Ontario farmers. Painted a bright red,

(Continued on page 12)

KING OFFICIALLY OPENS NEW BRITISH POWER PLANT

SITUATED AT Kingston-upon-Thames, Surrey, the new generating station depicted on this page was recently placed in service during an impressive opening ceremony attended by Their Majesties, King George and Queen Elizabeth. The new plant is one of four in a £20,000,000 scheme designed to answer the ever-increasing demand for electrical power. Operating at full capacity it will produce 120,000 kilowatts (160,000 h.p.). Top—The control rooms, showing the giant control panels. Centre—A general view of half of the turbo-generator room, with one of the main generators. Two of these have been installed. Another two are yet to be installed. Bottom—Twin chimneys of the new station have become a prominent landmark of the district. The main building shown in this photograph is large enough to contain two streets of suburban houses, one on top of the other.



Pleasant Reception Room For Queenston Visitors

It is an unusually pleasant experience to walk into the former guards' room at Hydro's Queenston-Chippawa plant these days.

Quite a transformation has been wrought!

Indeed, the people of Ontario have now more reason than ever to be proud of this majestic and world-famous symbol of Hydro in this Province.

From now on, visitors to the plant—and over 300,000 have signed the Guest Book since it was opened on December 28, 1921—are ushered into an inviting reception room before being taken on a conducted tour of the development.

The colour scheme of this reception

room is pleasing and attractive and imparts an atmosphere of quiet and unassuming simplicity. In this room visitors see on the pink-tinted walls large dramatic photographs of various Hydro developments.

by
Grace J. Carter
News Editor

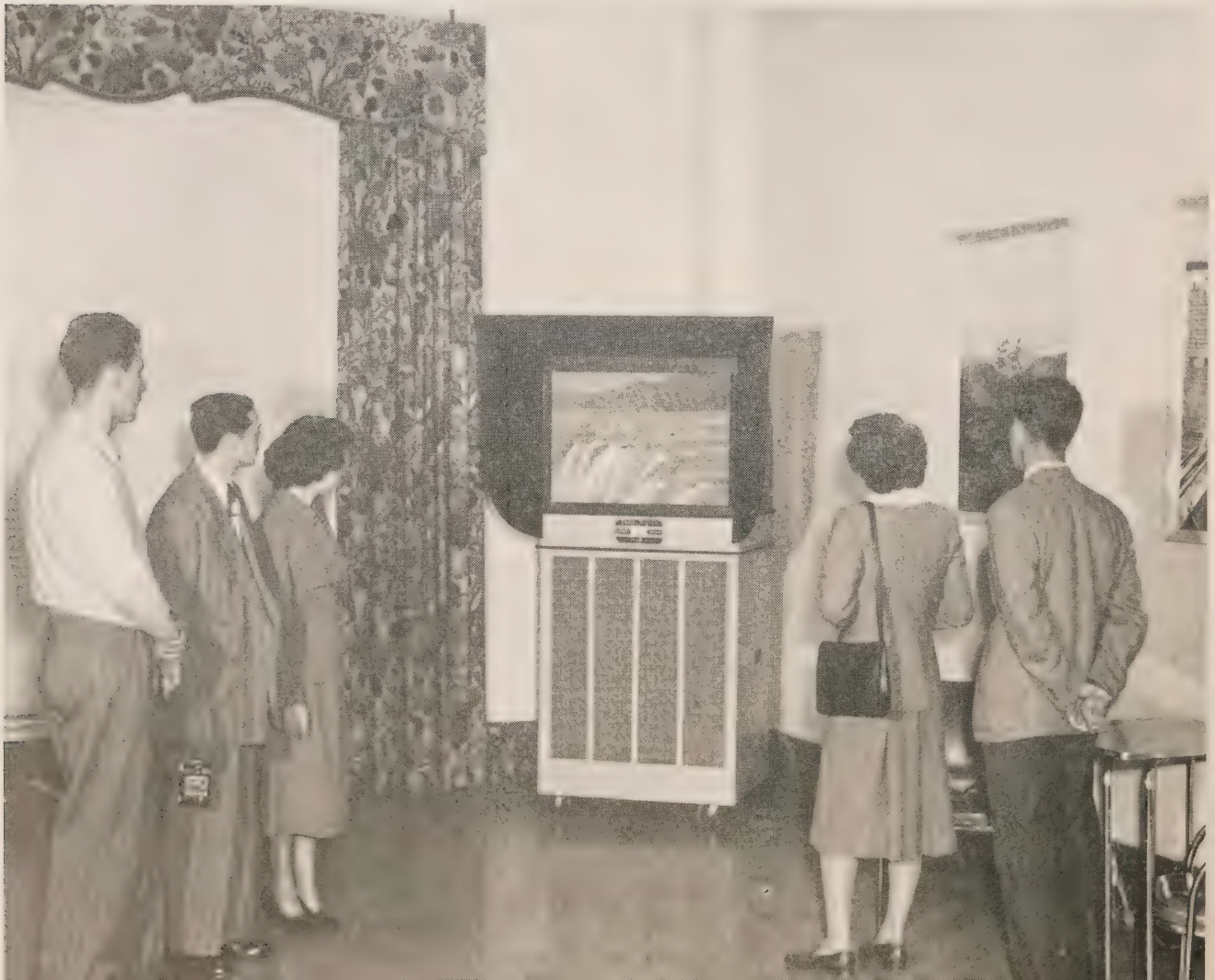
Following a tour of the plant, whose ten generators feed over half a million horsepower into the Southern Ontario System, the visitors return to the reception room for a presentation of Hydro's technicolour

movie "Niagara The Powerful." Before leaving, many of them take advantage of the special service provided by Hydro to send postcards, showing the Queenston plant, to their friends.

Recently Hydro News visited Queenston in order to form first-hand impressions of the "face-lifting" job which has been done in transforming this room. And it was found that in the homey atmosphere of the reception room the walls are painted a pleasing shade of peach blossom with a satin finish. The sound-proof ceiling has attractive cream coloured built-in lighting fixtures. The three large picture windows, extending almost from floor to ceiling,

(Continued on page 12)

TAKEN IN a corner of the newly decorated reception room of the Queenston-Chippawa plant, these American visitors, all from Brooklyn, New York, watch with interest the Hydro technicolour movie, "Niagara The Powerful."





MANY THOUSANDS of visitors from all over the world have visited the Queenston-Chippawa generating station. This group is just going into the main entrance.

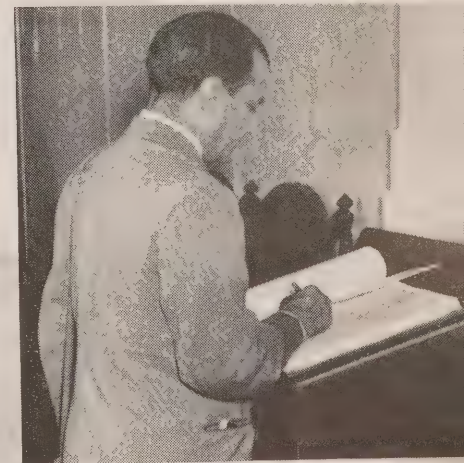


IN THIS section of the reception room visitors may sit down and write souvenir post cards to their friends.

NARAIN BHAVANANI, Inspector General of Electricity in the State of Hyderabad, India, was just signing the Guest Book when the Hydro News' photographer happened along.

PHOTOGRAPHED WHILE looking at the miniature farm exhibit, lower left, which is located in the reception room, these visitors later expressed delight at the homey atmosphere of the room with its attractive chintz drapes, sound-proof ceiling and built-in lights.

LARGE, DRAMATIC photographs (lower right) of the various Hydro developments are to be found on the walls of the reception room. When this photograph was taken these tourists were looking at a diagram of the Queenston generating station.



A YEOMAN SERVICE

(Continued from page 8)

with the smoothest of steel runners, if the old grey mare is as mettlesome as she used to be, they should certainly give life and colour to the dulllest winter landscape. The reason why the runners are so smooth is, of course, because electric controls are used in connection with the fabrication of the steel. The average power load at Market Street for all purposes is about 1,200 kilowatts. Hydro power is furnished by the Brantford Public Utilities Commission.

At the Verity Works, the factory is principally concerned with the manufacture of plows and drag harrows. The foundry turns out grey iron castings of every description for all the company's Canadian plants. The average demand for Hydro power is about the same as that at Market Street—approximately 1,200 kilowatts. Power comes in at 2,200 volts and is stepped down to required operation voltages. A good deal of it is converted to direct current. The two big travelling cranes are equipped with 50 horsepower motors, and altogether, 184 electric motors are operated on the premises.

Two shifts are at work in the foundry, and between 70 and 100 tons of molten grey iron are poured each working day. There is an electrically-driven slinger associated with the moulding operations, and a Hydro-powered shot-blast machine, firing at high velocity, cleans off any dirt from the surface of the castings. Electricity is used for the control and regulation of each mechanical process. Even the scrap steel and pig iron for the furnace loads are brought to the charging locations by an electric magnet suspended from an electric crane. We learned that the installation of further electrical equipment is planned.

Production Means Employment

Since the war the business of the Massey-Harris Company has expanded tremendously. The annual report for 1947 shows that sales last year reached an all-time record of \$82,834,104. Fifty-five percent of this income had to be written off against materials, supplies and expenses. Taxes amounted to 5.5 percent and depreciation to 1.6 percent. The dividends paid to shareholders amounted to 1.6 percent, and 3.3 percent was retained in the business. No less than 33 percent—or \$27,687,505—was distributed in employees' salaries, wages and pensions.

This very large amount paid in wages, it was emphasized, is evidence of how the welfare and prosperity of the industrial workers of the province are bound



L. W. MABON, Chief Operator of Queenston-Chippawa generating station gives some last minute instructions to John A. Robertson, Receptionist (seated left), and three of the Hydro guides who, from left to right are: Bruce Lamb, Bill Forbes and Ivan Brewer.

up with increased production. To maintain the present high level of employment the factories of Onatrio must be kept busy. They must be encouraged to build up not only domestic but foreign markets. This is one of the principal reasons, it has been pointed out, why it is so necessary for Hydro to endeavour to maintain vital and essential services to industry. At the same time, during the present serious power shortage, strong emphasis has been placed upon the need for co-operation of the industries themselves in operating all the auxiliary equipment they may possess at full capacity.

EXTRA SOURCE OF POWER

Robert H. Saunders, Chairman of The Hydro-Electric Power Commission of Ontario, announced recently that surplus power from the Canada and Dominion Sugar Company is being fed into Chatham Hydro lines. This extra power was procured by R. M. Laurie, Manager of the Western Region, London, and R. S. Reynolds, Manager of the Chatham Public Utilities Commission. The new twin turbo-generators are in operation only during the sugar beet processing season under normal circumstances. Because only 18,000 acres of beets have been harvested this fall, the processing period will be shortened considerably. This surplus power will benefit Hydro consumers until Christmas.

RECEPTION ROOM

(Continued from page 10)

have rust, yellow and green chintz drapes and white venetian blinds. A marble-effect linoleum covers the large floor. Several up-to-date comfortable chrome chairs with leatherette upholstery, some in rust colour and others in olive green are conveniently placed around the room. Chrome writing desks for the convenience of the postcard senders, ivory tinted floor lamps and chrome ash stands complete the picture.

During the first nine months of this year more than 28,000 people had signed the visitor's book, and among this number there were many celebrities including Dr. Tso Chi from China; Haskal Pasha, President of the Egyptian Senate, Cairo, Egypt; engineers from Mexico, Belgium, Australia, New Zealand, Switzerland, India, United Kingdom and the United States. Queenston is also a mecca of interest for students from universities, agricultural schools; high schools, public schools; groups from churches, young people's associations and many others.

The length of the tour, Hydro News was informed, varies, depending upon the interest shown by the visitors themselves. If the Hydro guides, who are attired in dark blue trousers, white shirts, maroon ties and navy blazers, find that their charges really want to know what makes the plant tick, then they are quite willing to give the whole day to them if necessary. This is especially true when engineers from foreign countries visit the plant.



THROUGH AN all-out effort, Hydro's mighty Des Joachims project on the Ottawa River may be completed and in operation six months ahead of schedule. This aerial view emphasizes the impressive proportions of the development which will add 358,000 kilowatts (480,000 hp) to the Commission's present resources when placed in service. The steel Bailey Bridge structures, which support the concrete conveyor system indicate the site of the main dam which will be 2,400 feet in length and 190 feet high. This photo also illustrates the rapid progress being made on the Ontario end of the dam structure where tons of concrete are being poured daily. (RCAF Photo).

Year-End Construction Review

AHEAD OF SCHEDULE

ACCCEPTING the challenge of a rapidly expanding province, Hydro is today engaged in an all-out development program to meet the ever-increasing demands for power from factories, farms, mines and homes.

Involving the expenditure of approximately \$400,000,000, this program entails present construction of six new generating plants in various parts of Ontario which will augment the Commission's present resources by 879,000 kilowatts (1,176,500 hp) when placed in operation during the next two or three years. In addition five new generating sources, with a total operating capacity of 185,000 kilowatts (247,500 hp) have already been placed in service since the end of the war.

The Commission's construction program also includes major extensions to

by
Boyd L. Graham
Hydro News

its network of transmission lines across the province, while work on several new transformer stations as well as frequency changer and condenser stations is also under way.

Preliminary Plans

Preliminary plans for this tremendous program of construction were made by the Commission even before the end of World War II. Thus, on August 23, 1945—eight days after the Japanese surrender—the Commission gave the order to proceed with immediate construction of the second unit at its DeCew Falls plant near St. Catharines. A short time

later—on September 20, 1945—the Commission also commenced work at its Stewartville site on the Madawaska River.

Despite continued shortage of steel and other essential materials, these developments have been completed on schedule.

The second 25-cycle unit at DeCew Falls Generating Station was placed in service in 1947, adding 57,000 kilowatts (77,000 hp) to the resources in the Southern Ontario System.

On September 25 this year, the Commission officially opened the Stewartville development. This new plant has a total operating capacity of 60,000 kilowatts (80,000 hp) which is also being fed into the Southern Ontario System. Cost of this development, including the plant was \$12,470,000 while an additional \$3,939,600 was expended on transmission lines and associated facilities.

Power From Polymer

Hydro also commenced taking delivery of 22,500 kilowatts (30,000 hp) of steam-generated power from the Polymer Cor.

(Continued on page 15)

**Five New Postwar Generating Sources Already In Service—
Commission Pressing Forward With Construction
Of Six Other Major Power Developments**

#his and #hat

By THE EDITOR

IF WE are spared until we are 70 or more, we hope to be still hanging up our socks on Christmas Eve . . . just as we have been doing since away back when. And we hope that if and when we reach 70 that Santa will accept our assurance that we have tried very hard to be "a good boy" and that we will experience that same thrill as we run or hobble to explore the depths of our socks Christmas morning. We still believe in Santa Claus and hope that we will never have reason to have any doubts on this point. We have seen quite a few Christmases — we live many of them over and over again on Christmas Eve — and no one has succeeded in disillusioning us about the reality of Santa Claus. No one ever will.

As we sat down to write this piece about Christmas we wondered what kind of a world it would be if there were no such thing as Christmas.

NO SUCH thing as Christmas? No carol singing? No stockings hanging in front of the fireplace Christmas Eve? No Christmas trees in all their tinselled glory? No Santa Claus to fill the stockings and lay gaily decorated and beribboned gifts beside the tree? No excitement Christmas morning when young kiddies and very old kiddies open their presents?

But there was, and is, "A Holy Night." There was a little Babe in a manger . . . it's nearly 2,000 years ago . . . in that little town of Bethlehem . . . and there was the Star and the Three Wise Men who bore gifts of "gold and frankincense and myrrh" — the first Christmas gifts. And so there is a Christmas and its ever-enduring story . . . of Peace on Earth . . . Good Will to Men.

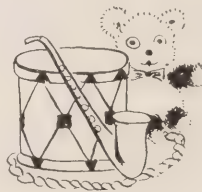
AND AT this season, those who know how to keep Christmas and what it means, must find room in their hearts to at least pity those whose vain, cruel philosophies of life have brought suffering to millions of people. Why pity them? Because, some time, some where, they will remember the meaning of Christmas. But . . . it will be too late.

It is good to pause and meditate about

the solemnity of Christmas and it is good to make merry and grasp your friends by the hand and say "Merry Christmas" and really mean it.

When we say "Merry Christmas" to all our readers we mean it. These are not empty words. They come from the heart.

It is always a source of deep regret to us that there are thousands of readers whom we will never see in this life. We would like to have met them all, if such a thing were humanly and physically possible, for we like people. And at Christmastime we realize more than ever that most folk, deep down, are kindly. We believe that there is a little good in the worst of us and a little bad in the best of us and that if we can at least try to have the good outweigh the bad then this will be a better world in which to live.



AND AFTER Christmas comes the New Year — a time when many folk speak lightly of making good resolutions.

But, let's pause again and think this resolution business over. Are there no worthwhile resolutions which could be **MADE** and **KEPT**? Suppose we decided to apply the Scout philosophy of at least "one good deed a day" during the coming year and see what happens? Suppose people the world over got that same idea. What would happen? Well, first of all, there would be a lot more real, worthwhile happiness in the world for there is no greater happiness in life than that which comes from the performing of a kindly act or saying a kindly word provided it is done without fanfare or ostentation.

If all the readers of Hydro News were to decide that during the coming year they would not let one day pass without doing

some little thing that would help someone in some way, imagine the impact! Being human beings, many of us are naturally thoughtless and forgetful at times and often we fail to realize that we may quite unintentionally hurt some one whom we love, just by some little word abruptly spoken or by some act and, therefore, it will be necessary to do some personal stocktaking when we make that resolution to do at last that "one good deed a day." If we get the habit of doing one good deed then, very soon, we will be doing many good deeds. If we can spread this idea far beyond our own towns and cities, far beyond our Province, far beyond Canada and throughout the world, would that not make for lasting peace and happiness?

AND, THERE, we've been doing a little thinking out loud. We've taken that liberty because it's the Christmas Season. We're just going to press with the Christmas issue of Hydro News as we write this piece.

We hope our readers will like our cover illustration. It's interesting to us for a number of reasons. For instance, this year we discovered that Santa Claus has been working for the Commission for quite a long number of years. Of course, he uses another name when he's doing Commission work. We were just wondering how many readers know his "Commission name." To the first reader sending a letter through the mail giving the correct name we will personally award a large box of cigarettes. No phone calls or personally delivered letters will be acceptable. It must come through the mail. All are eligible to enter this grand contest with the exception of Mr. Claus and the other Clauses in his family. Closing date is December 30, 1948. Now go to it, boys and girls, just who is Santa Claus?

In closing this piece on Christmas, another thought came to mind. Wouldn't it be grand if Messrs. Stalin, Molotoff and company could qualify to become members of the Boy Scouts?

Now, once again, to one and all: A Very Merry Christmas and a New Year filled with good deeds and happiness.

AHEAD OF SCHEDULE

(Continued from page 13)

poration at Sarnia on November 1, when brief ceremonies marked the opening of the Commission's new transformer station at Sarnia, and the new Westminster Frequency Changer and Transformer Station near London. Completed ahead of schedule, these two projects along with the new 67-mile transmission line linking the stations, now make it possible to transmit Polymer's 60-cycle power to Westminster where it is converted to 25-cycle and fed into the rich industrial and agricultural areas of the western portion of Southern Ontario. Total cost of the two projects, including the new transmission line, was approximately \$8,440,000.

An example of the magnitude of the Commission's projects, still under construction, is the development at Des Joachims on the Ottawa River where Hydro is building a plant which will

be second in size and capacity only to the Queenston-Chippawa plant on the Niagara River. Through an all-out effort, this development, originally scheduled to have four units in service by 1950 and the remaining four in 1951, may be completed and in service six months ahead of schedule. Estimated cost of the Des Joachims project, which will provide an additional 358,000 kilowatts (480,000 hp) for Southern Ontario is now set at \$56,875,000. In addition, new transmission lines and associated facilities will add \$29,400,000 to the cost of this development.

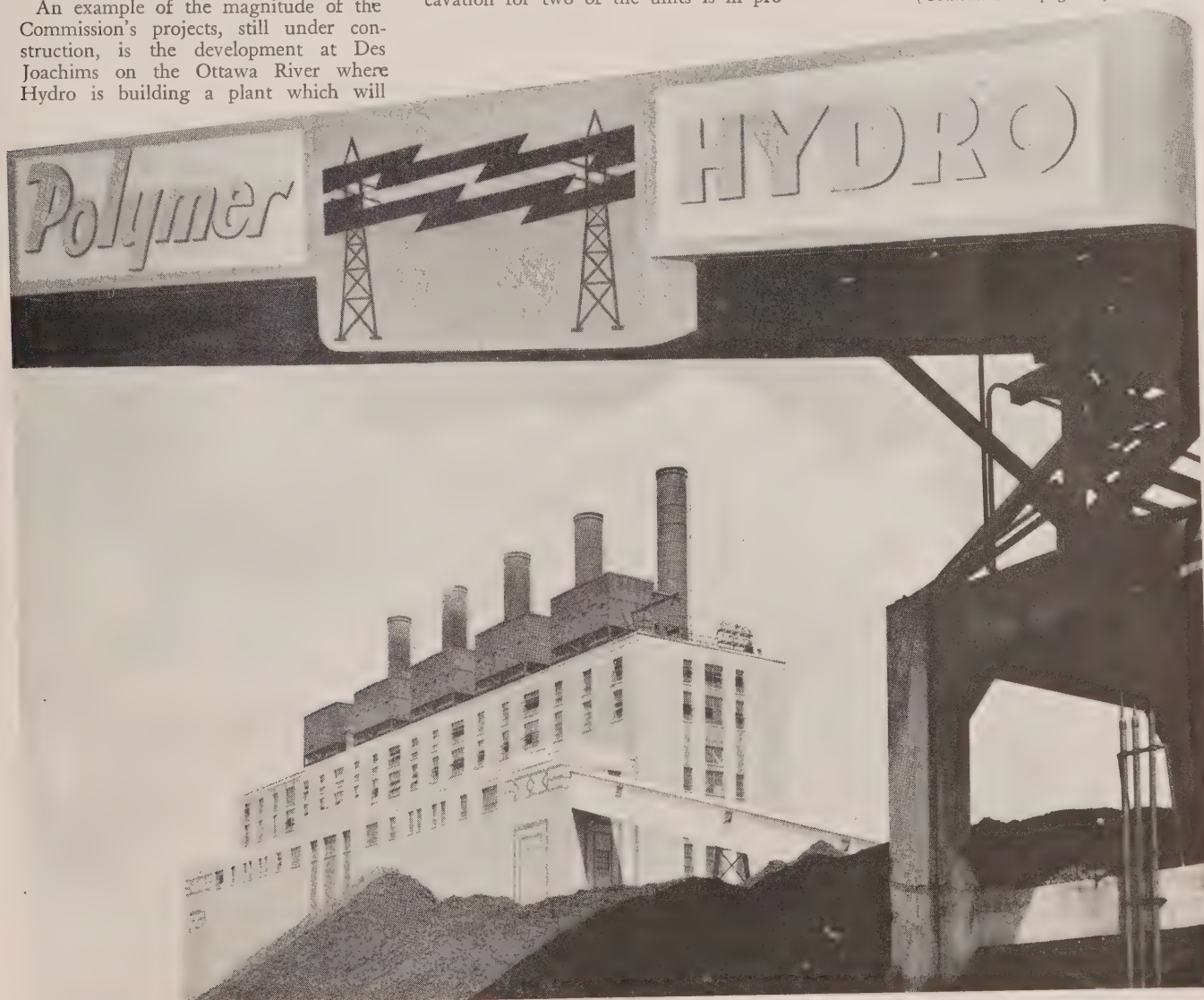
Construction of both the main dam and powerhouse is progressing rapidly. A substantial portion of the rock excavation has been completed at this point, while concrete pouring is also well advanced. In the powerhouse area, rock excavation for two of the units is in pro-

gress while concrete pouring has also begun for two other units. In the McConnell Lake area, where a control dam for the development is under construction, excavation is approaching completion and concrete pouring has passed the initial stages. Approximately 2,800 men are employed on the project.

At Chenaux work is proceeding on a \$25,000,000 development designed to augment the Commission's present resources in Southern Ontario by 119,000 kilowatts or 160,000 horsepower when completed, with six units coming into service in 1951 and two in 1952. It is also estimated that an additional \$8,000,000 will be expended on ancillary facilities in connection with this development.

With approximately 1,000 men employed on all phases of the Chenaux de-

(Continued on page 18)



HYDRO COMMENCED taking delivery of 22,500 kilowatts (30,000 hp.) of steam-generated power from the steam plant of Polymer Corporation Limited at Sarnia, pictured above, on November 1, upon completion of Sarnia Transformer Station and Westminster Frequency Changer and Transformer Station near London. Completed ahead of schedule, these two projects now make it possible to transmit Polymer's 60-cycle power to Westminster where it is converted to 25-cycle and fed into the rich industrial and agricultural areas of southwestern Ontario.

NEW STATION WILL AUGMENT POWER SUPPLY IN SUDBURY AREA

PART OF an over-all plan to augment transmission of 60- and 25-cycle power to Sudbury and the surrounding area, a new \$3,000,000 Frequency Changer and Transformer Station is now under construction, four and three-quarter miles northeast of Sudbury. Photographs on this page were made available to Hydro News through the courtesy of the Sudbury Daily Star.



WORKMEN, ABOVE, are shown completing the framework for the foundation of the frequency changer building. The extensive levelled area between the excavation for the station itself and the construction camp is shown below.

COMFORTABLE QUARTERS for those working on the project, in addition to a mess hall which seats 216 men at one time, have been provided at the site as shown above.



BLUEPRINTS OF the new station near Sudbury are examined by the men in charge of the project. They are, left to right, W. G. Moorehead, Assistant Resident Engineer; H. C. Jones, Construction Superintendent and W. H. Lafontaine, Resident Engineer.

WORK IS proceeding at the Chenaux Development, which is scheduled for completion by September, 1952. This illustration shows the crib work for the cofferdam which will divert the river during the construction of the main dam and warehouse. H.E.P.C. field engineering buildings are in the background.



BELOW — THIS photograph shows men constructing form work for the Limerick Island dam sluiceway section. This gravity type dam will incorporate six 40-foot sluiceways and sixteen 16-foot stoplog sluiceways. When completed the Chenaux Development, which is near Portage du Fort in Quebec, will add 119,000 kilowatts (160,000 h.p.) to the Commission's Southern Ontario System.



ABOVE—THESE four men were "snapped" while working on the cofferdam located approximately 1000 feet above the Ontario span of the interprovincial bridge. When completed, this cofferdam will have a maximum height above the river bed of about 60 feet.



THIS ILLUSTRATION was taken looking in an easterly direction across the area of excavation for the unwatering channel and the Limerick Island dam. The wedge-shaped Limerick Island divides the river into two channels, the northern one of which is in Quebec and will be closed by a gravity type dam incorporating eight 16-foot stoplog sluiceways.

AHEAD OF SCHEDULE

(Continued from page 15)

velopment, rock excavation is well under way while a considerable portion of the Ontario channel cofferdam has been completed.

Meanwhile, Hydro is proceeding with preliminary work at the LaCave site on the Ottawa River. Present plans call for construction of a development with an estimated capacity of 180,000 kilowatts (240,000 hp) which may be available by the latter part of 1951.

Making Favorable Progress

Approximately 115 or more men are employed during the preliminary stages, with work on the Ontario camp making favourable progress. Construction of access roads from Mattawa is now under way, while other activities include river soundings, diamond drilling, investigations, surveys, construction of camp buildings and the clearing of a small area on the dam site in Quebec.

Another of the projects on which Hydro is engaged at the present time is the construction of a new steam plant located near Windsor. This plant will cost approximately \$20,650,000 to build and will have an initial capacity of 120,000 kilowatts (160,000 hp) with an ultimate capacity twice that figure.

While work is proceeding on these developments which will augment the resources of Hydro's Southern Ontario System, the Commission is also providing much-needed additional power in Northern Ontario.

Fourth Unit At Ear Falls

During July of this year, the fourth unit at Hydro's Ear Falls plant on the English River was placed in operation. This plant, which now has a total installed capacity of 18,750 kilowatts (25,000 hp), plays a vital role in the operations of several important gold mines throughout the Red Lake and Woman Lake districts of Northwestern Ontario. Cost of the fourth unit was \$1,888,000. Installation of ancillary facilities in connection with this project cost an additional \$443,000.

The Aguasabon development at Terrace Bay, on the north shore of Lake Superior, was officially placed in service on October 19. The capacity of this plant is 40,000 kilowatts (53,000 hp).

Serves Mill and Townsite

Expenditures involved in construction of this development were \$12,568,700 while ancillary facilities, including 135 miles of new transmission line as well as transformer facilities, cost an additional \$3,961,250. Much of the power from the Aguasabon plant is being supplied to the new mill and townsite which

George Hancock Dies: Leading Galt Figure

One of the original members of the Galt Public Utilities Commission, George Hancock, 69, died of a heart attack on October 28.

A prominent figure in Galt community life, Mr. Hancock had been a member of the local Commission since its inception in 1918, and was its Chairman for a number of years. Previously he had been a member of the Galt market, fire and light committee, and it was largely due to him and to the late F. S. Scott that in 1910 a contract was signed with The Hydro-Electric Power Commission of Ontario.

On December 21, 1939, Mr. Hancock was feted by representatives of the P.U.C. and the H.E.P.C. at a banquet marking the completion of 22 years' service on the board. On this occasion he was presented with an engraved silver tea service.

He was born in Galt on April 13, 1879, and attended Victoria School and Galt Collegiate Institute. In partnership with the late George Turnbull he started the Galt Paper Box Company in 1903, taking over sole control of the business on the death of Mr. Turnbull. He was also actively connected with the Dominion Tack and Nail Company, the Scroggins Shoe Company, the Wragge Shoe Company, Narrow Fabrics, the Scott Shoe Company, the Galt Wood Heel Company, and the Galt Chemical Products Limited, and at the time of his death was President of Dominion Plywoods of Southampton.

As active in recreation as he was in business, Mr. Hancock was an outstanding soccer player in his younger days, later becoming interested in bowling, golf and curling.

In recent years he turned to farming as a hobby, and his herd of Jersey cattle, raised on his farm, Roslyn Park, has won ribbons in both Canada and the United States.

Surviving are two daughters, Mrs. Gibson Goldie (Marion) of Brantford; Mrs. John Donovan (Louise) of Galt; one sister, Mrs. H. B. Storey of Harrison, Michigan; one brother, Ald. W. Norman Hancock of Galt; and two grandchildren.

have been established adjacent to the main dam by the Longlac Pulp and Paper Company. The balance of the power from the Aguasabon goes into the Thunder Bay System to serve industries, homes and farms in the Lakehead and surrounding areas.

At Pine Portage on the Nipigon River, the Commission is engaged in the construction of a new power development whose initial capacity will be 60,000 kilowatts or 80,000 horsepower. Present estimated cost of the Pine Portage project,

which is scheduled to be in service by 1950, is \$19,980,000 while other associated facilities will cost an additional \$2,860,000.

At this development, good progress on clearing operations for the flooded area is reported with over 1,450 acres cut already. Preparation of foundations for the dam on the west bank of the Nipigon River and erection of formwork are now under way. With almost 1,250 men employed, excavation for the diversion channel and tailrace is also proceeding.

On The Mississagi

At the Tunnel Development on the Mississagi River, work is proceeding on a plant which will add another 42,000 kilowatts (56,500 hp) by early 1950. Cost of the Tunnel Development has been set at \$13,800,000 while associated facilities in connection with this project will involve an expenditure of \$6,272,000. When placed in operation it will supply additional power to the Sudbury and adjacent districts where expansion in many fields is creating increased demands for electrical energy.

Concrete pouring at the diversion tunnel portal has commenced while rock excavation for the sluiceway channel is virtually complete and formwork for the side dam is in process of erection. Special contractors have almost completed clearing operations. (Editor's Note—For more complete details see article entitled "At The Tunnel Development" elsewhere in this issue.)

New Power Sites

Hydro is also giving consideration to further power developments on the English and Winnipeg Rivers in Northwestern Ontario. Boundary Falls, located on the Winnipeg River, three miles from the Manitoba boundary, is estimated to have a potential capacity of 112,500 kilowatts (150,000 hp). Kettle, Oak and Manitou Falls, on the English River below Ear Falls, should produce well over 75,000 kilowatts (100,000 hp).

Another important phase of Hydro's present operations has been the frequency conversion program for the Southern Ontario System. Preliminary surveys are now under way in four of Ontario's 25-cycle areas, marking the commencement of this plan. It is anticipated that actual conversion in two of these areas will begin next fall.

Surveys Being Undertaken

These surveys are being undertaken in Scarborough, London, Sarnia and in the section of Hamilton which is at present served by 66⅔-cycle current. Scarborough and Sarnia are the first two places scheduled for conversion in September, 1949, while conversion work is likely to be started in London and Hamilton districts by the summer of 1950.



Hydro HOME FORUM by Edithemmu Muir HOME ECONOMIST

Merry Christmas Everyone! Sparkle, rustle, tinsel and bustle—ribbons and seals, boxes and bags end up with family gatherings and gay greetings. Christmas is all this—but much more, too.

* * *

Christmas is a time for making memories, and for building pictures that will remain with little folks the rest of their lives. It isn't just one day—it's a whole month of exciting activity that brings out the stars in children's eyes. It is an intangible spirit that runs like quicksilver throughout the happy holiday season.

* * *

Christmas means making cookies, steamed puddings, fruit cakes and fruit-filled breads. It means preparing the traditional Wassail bowl, served steaming hot as an accompaniment to the singing of carols.

* * *

Dreaming of a white Christmas!—I've thought of a fascinating cookie house that may be made by using a cardboard dollhouse set on a large tray. Pat thin layers of cotton batting around the sides and the roof in snowdrift effects. Place fancy cookies (snowmen, trees, stars) among the fluff. Also press in brazil nuts for steps, almonds for edge of roof and filberts for rock garden.

* * *

We mention filberts since you get more of them for the price per pound in comparison with other Christmas nuts.

* * *

A ten-year-old made his own Christmas tree last year using green spruce twigs and the stand that holds the fireplace set. The twigs were trimmed with silver foil bows and cranberries attached with cellulose tape. Then these boughs were tied securely to the stand with brown string, and daubs of cotton batting camouflaged the construction.

* * *

To prevent candles from dripping, keep them out in the cold before lighting.

* * *

Our Sugar-Plum tree is made by cutting the sides of an empty can (such as

ROAST DUCK OR GOOSE

Choose a duck or goose that is not too fat; singe, clean, wash thoroughly inside and out with water to which a little baking soda has been added; rinse thoroughly and dry. Stuff with highly seasoned bread dressing or a fruit or onion dressing. Rub with salt, sprinkle with pepper and prick several times with darning needle. Place breast side up on rack in roast pan. Add 1 cup boiling water and cover. Roast about 1 hour, then pour off the water and continue roasting uncovered until done. Dressed duck or goose of 10 to 12 pounds requires about 22 minutes per pound at 325 degrees.

(NOTE: Dressed turkeys of 12 to 14 pounds require about 18 minutes per pound. Meat thermometer in centre of thigh should read 190 degrees—or a skewer should pierce bone easily.)

SAVOURY DRESSING

8 cups soft bread crumbs
2 teaspoons salt
½ teaspoon pepper
2 teaspoons savoury
½ cup melted fat
1 beaten egg
1 cup chopped apple, celery and sausage
2 tablespoons chopped onion
Mix all ingredients together.
Enough for 10 or 12 pound goose.

a corn niblets tin) into narrow strips vertically from top to bottom. Each strip is twisted a bit, spread out, and the ends are snipped to a point. Finally cookies are affixed to each end. To prevent breaking the cookies, make holes by spearing them with an ice pick dipped in hot water.

* * *

Maybe in the mad scramble to buy gifts for everyone, you've overlooked yourself. The man you should see is not Santa Claus, but the ticket agent. To prevent another line-up, buy your train fare early. This may also be a reminder to the car drivers to have their

car serviced before a trip. We'll soon be safely away on our way to family gatherings.

* * *

New look in shrimp colour. Odour is same. Instead of the pinkish white variety, there is now a more pinkish brown kind on the market. You will now depend on the fish market for colour of shrimp to serve for your holiday buffet luncheon.

* * *

Shrimps à la Newburg: Clean 1 pint shrimps and cook 3 minutes in 2 tablespoons butter. Stir in 1 teaspoon lemon juice. In another pan, melt 1 tablespoon butter; and 1 tablespoon flour and ½ cup cream. When thickened, add 2 beaten egg yolks, the shrimps and 2 tablespoons cooking sherry. Season with salt, pepper and 1 teaspoon grated cheese. Serves 6. This goes well with hot potato chips.

* * *

There is something about a fruit salad plate during the festive season that is most refreshing. Especially this one: Slices of pear put together with slices of unpeeled apples inserted; cooked, cooled apricots rolled in coloured coconut; dates filled with nuts; a peach half filled with peel and cottage cheese, and a sparkling jelly mold dotted with cherries. Place the chilled fruits on crisp lettuce and serve with sour cream dressing.

* * *

An attractive way to serve diced fruit is this picture idea: A double quantity of cream pudding is molded in a 6 by 10 cake tin. Turn out carefully on a platter, cut out sections using star and tree cookie cutter. (Save cut-outs for next day's dessert.) Fill cavities with diced fruit; cut into sections at the table. Use pie lifter to serve.

Speed Building of New Plants

No Effort Being Spared Chairman
Robert H. Saunders Tells District
No. 5 O.M.E.A.

An assurance that no effort was being spared in speeding construction of new power plants was given by Commission Chairman Robert H. Saunders when addressing District No. 5 of the Ontario Municipal Electric Association at Niagara-on-the-Lake.

As an example, he pointed out that the first four units at the Des Joachims development on the Ottawa River would likely be in service by the spring of 1950, or six months ahead of schedule. At the same time work was proceeding on other important power projects, including the Windsor steam plant which was expected to be in operation by the spring of 1951.

W. Ross Strike, K.C., the Second Vice-Chairman, paid warm and sincere tribute to Hydro municipalities for their fine co-operation in the power conservation campaign. He strongly emphasized the need for maintaining this effort.

In his address at the evening dinner, George F. Hutcheson, President of the O.M.E.A., stressed the necessity and ad-

vantage of Hydro utilities maintaining close contact with their consumers.

Resolutions Endorsed

Under the chairmanship of Roy Pierson of Brantford Township, President of District No. 5, the afternoon session of the meeting was devoted mainly to a question period. One subject that came up was the possible changing of the O.M.E.A. districts to coincide with the regional areas. After considerable discussion the following resolution was passed:

"RESOLVED THAT we recommend to the Executive Committee of the O.M.E.A. that we remain as we are now constituted insofar as District No. 5 is concerned."

Other resolutions passed during the meeting were:

"RESOLVED THAT we go on record as being heartily in favour of a Pension and Insurance Plan for all municipal commissions, and would strongly urge that each municipality in this district adopt such a Plan, and that a copy of this resolution be forwarded to each municipality in this district."

"RESOLVED THAT we reaffirm our

resolution of last year—that the clause in the Code Book forbidding plug outlets in bathrooms be amended in favour of properly installed three-point grounded outlets for heater and regular outlets for electric razors, hair-dryers, etc.,

"AND THAT this resolution be sent to the Canadian Engineering Standards Association for their approval."

There was considerable discussion on the power situation and some of the delegates suggested that there might be greater uniformity in the way in which municipalities handled power cut-offs.

During the discussion it was pointed out that it was not feasible to have a uniform system as every municipality had a different problem. Mr. Strike remarked, "If anyone could suggest any way by which a uniform system could be inaugurated, the H.E.P.C. would go for it 100 per cent."

Officers elected for the ensuing year are: President, Roy Pierson, Brantford Township; Vice-Presidents, D. P. Cliff, Dundas, and K. C. MacLeod, Stamford Township; Directors: K. V. Bunnell, Brantford; Thomas Barnes, Niagara Falls; L. W. McConkey, Niagara-on-the-Lake and William Watterson, Welland.



HERE IS an interesting aerial view of the Commission's Cameron Falls development on the Nipigon River. The colony can be seen in the background.



HERE ARE members of the executive of District No. 5 O.M.E.A. From left to right, they are, front row: K. C. MacLeod, Stamford Twp.; Roy Pierson, Brantford Twp.; D. P. Cliff, Dundas; William Watterson, Welland. Back row: K. V. Bunnell, Brantford; L. W. McConkey, Niagara-on-the-Lake.

LISTENING INTENTLY to an after-dinner speech, those identified in this group are: S. E. Thomson, Niagara Falls; H. A. Howard, Brantford Twp.; R. M. McKenzie, G. C. Parker and H. J. Edwards of Hamilton Region, H.E.P.C.; Sam Hill, Toronto Fire Marshall; K. C. MacLeod, Stamford Twp.



NO DOUBT a knotty problem was being solved when this shot was taken. In the group, from left to right they are: Thomas Barnes, Niagara Falls; Marvin Misener, R. T. N. Callan and E. T. Weightman of Chippawa.



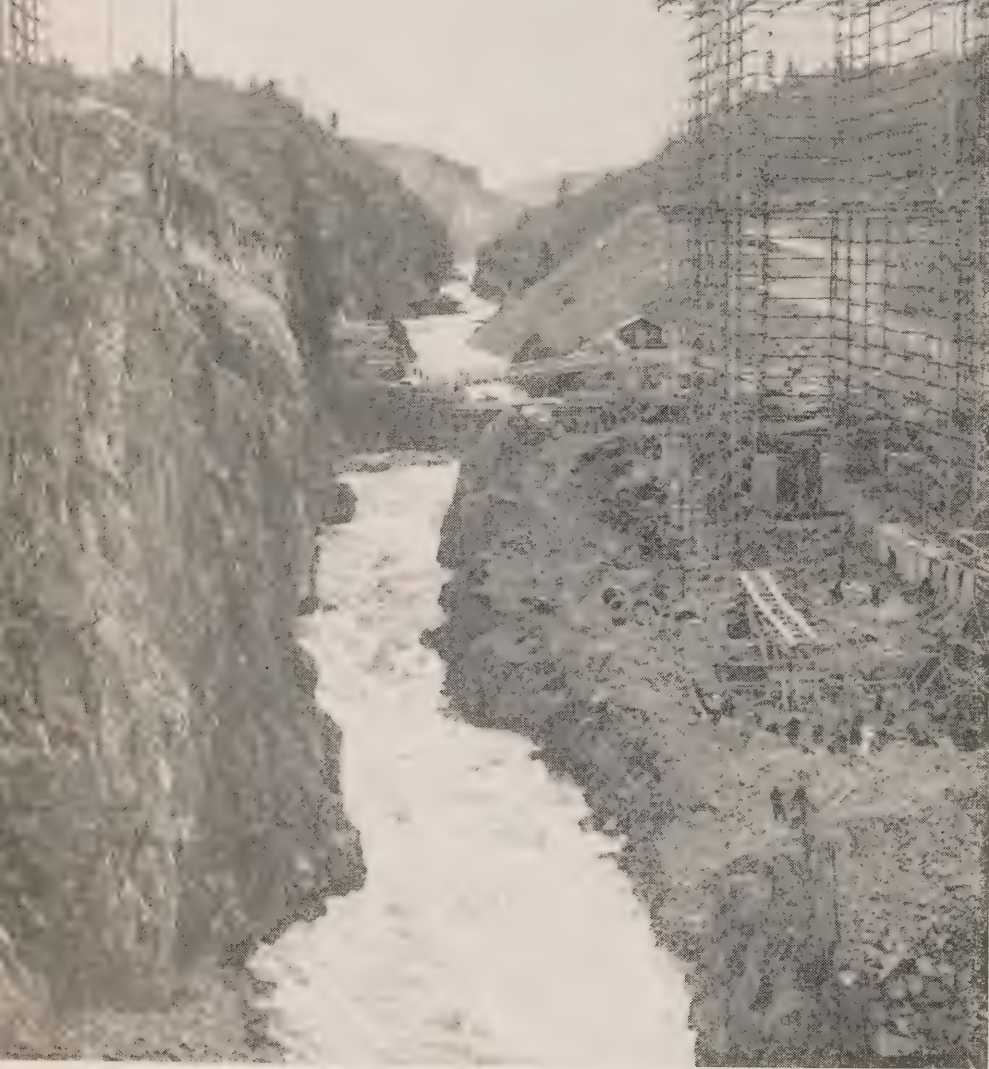
THIS IS not the "Hot Stove League," but these delegates were most certainly given a warm reception. Around the stove are: W. R. Catton, Brantford; T. W. Houtby and William Watterson, Welland; J. A. Williamson, Niagara Falls; K. V. Bunnell, Brantford; S. E. Thomson, Niagara Falls; John Hunter and Fred Barraclough, Beamsville; Frank Springer, Welland; J. C. McEwan and George Unger, Brantford Twp.; H. Diffin, Welland; A. W. Bradt, Hamilton, Norman Grandfield, Brantford.



FEELING HAPPY after a tasty roast beef dinner, this group of delegates include John A. Williamson, Niagara Falls; D. T. Flannery, Niagara Region, H.E.P.C.; W. R. Catton and Norman Grandfield, Brantford; A. McKnight, Port Dover; R. M. Durnford, H.E.P.C.



At the TUNNEL DEVELOPMENT



FROM a scenic point of view Tunnel Site is one of the most impressive of Hydro developments. When the dam is built, the long stretch of canyon shown will be flooded to form the forebay, contrasting spectacularly with the deep gorges to the south.

by
Harry M. Blake
Hydro News

Activities at Hydro's Tunnel Site Development on the Mississagi River some 10 miles north of Thessalon have now reached the stage where the construction of the main dam and powerhouse is in immediate prospect. A recent visit by Hydro News to this 42,000 kilowatt (56,500 hp.) project was illuminating. It left an impression of work carried out with surprising vigour and dispatch.

It was November 19. The Bailey Bridge structures, whose erection had begun only a few weeks before our arrival, were etched in bold relief against the receding vistas of rock-walled canyon. The geometrical pattern of the towering monoliths presented an arresting picture of strength and beauty.

Fifteen Monoliths

Except for the river section, the Bailey Bridging, which rests on concrete footings, was practically completed at the time of our visit. All included, there will be 15 monoliths. Lined with plywood, they will provide a steel form cage for the pouring of the concrete

for dam and powerhouse. This use of Bailey Bridging is an innovation of Hydro developments, replacing the customary wooden forms. The monoliths have, of course, to be built to conform to the dimensions and shape of the dam. The design will entail the addition of sloping lateral sections to the structures as we saw them. At the top of the Bailey Bridging, an enclosed conveyor belt will carry the concrete from the mixing plant to the pouring locations.

Bridging River Section

The mixing plant is on the west bank of the river. It was explained, however, that pouring operations at the east end of the dam would not have to wait upon the dewatering of the river and the erection of the central monoliths. A bridge of the Bailey material would be built to span the gap of approximately 150 feet which separated the two completed sections of the giant steel cage. Pouring could then be carried out simultaneously on both sides.

We found that all excavation at Tunnel Site had been completed except in the river section which had not yet been dewatered. Altogether, including the diversion tunnel, approximately 130,000 cubic yards of rock and overburden had been removed. It was estimated that about 60,000 cubic yards of rock would have to be excavated for the tailrace. This work downstream will be begun in time to ensure completion before the generating machinery is installed in the powerhouse and ready for service.

Work at Tunnel Portal

After greeting R. R. Holland, General Superintendent for the Rayner Construction Limited, general contractors for the development, we visited the locations where the chief activities scheduled for the week were being carried on. We were accompanied by W. M. Reynolds, who, as Hydro's Resident Engineer, has general supervision of the project in the field.

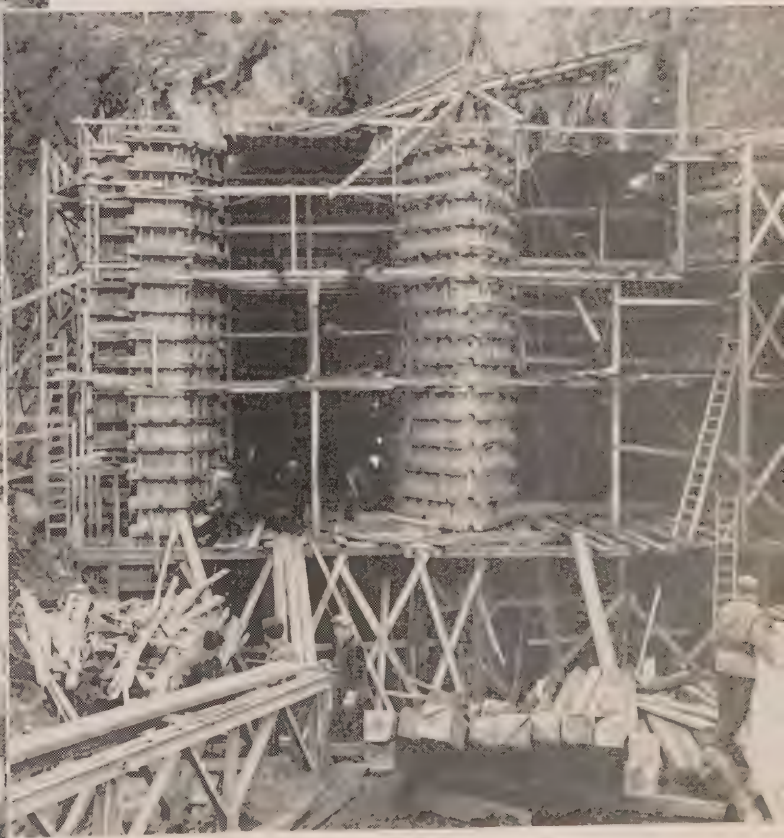
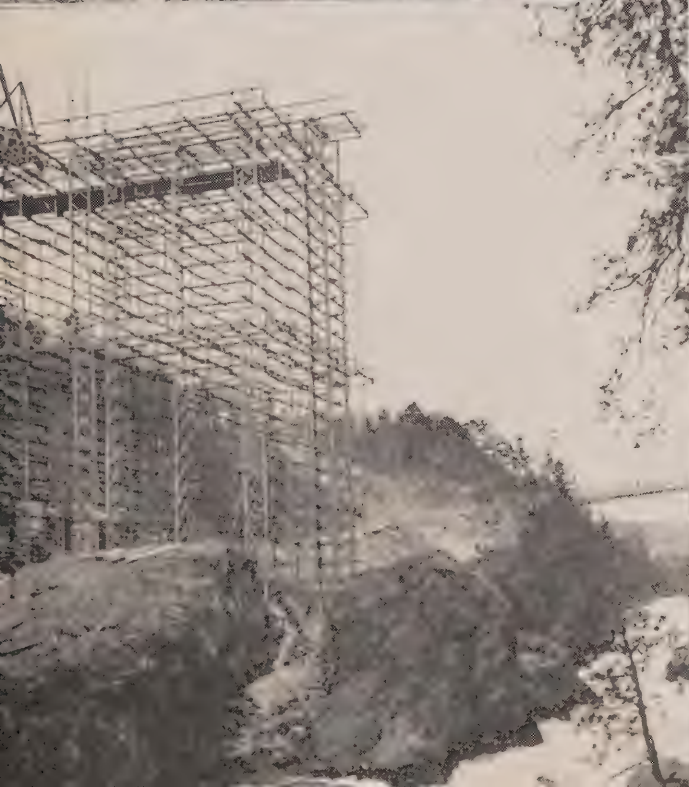
From the east bank of the river a Bailey Bridge had been thrown across to the entrance of the diversion tunnel on the west bank. This bridge was used as a means of access while the tunnel was being excavated and is now used to facilitate the concreting of the portal. This job was in full stride as we approached. We understood from Mr. Reynolds that, with its completion, diversion would be immediately effected and the excavation for the dam and powerhouse foundations in the river bed carried out. The dewatering tunnel is 900 feet long and 30 feet in diameter. As was the case at Stewartville, it will engage the full flow of the river while work is carried out in the dry. When the dam is completed, the tunnel will

(Continued on page 24)

RIGHT—LOOKING upward from the exit of the diversion tunnel to the automatic batching and mixing plant on the west bank of the Mississagi river. **BELOW**, the Bailey Bridge cage is shown during construction.



BELOW—WORKING at the portal of the diversion tunnel. When the main dam is finished, the tunnel will be sealed off by steel gates. **AT LEFT**, are the towering Bailey Bridge monoliths on the east bank. Fifteen of these giant monoliths will be needed for the form cage.



TUNNEL DEVELOPMENT

(Continued from page 22)

be sealed off by a steel gate and plugged with concrete.

Following the line of the main dam, we clambered up the west bank to a spot where wooden formwork for the wing dam was already in evidence. This structure will be about 1,000 feet long and will block off a low spot in the ridge.

Retracing our steps, we paused for a look inside the concrete mixing plant. The same type of machinery is installed here as at Stewartville. The cement and aggregate, stored in bins at the top of the plant, pass to small bins below for precise automatic weighing, and then on through a collector cone to the mixing machines. All operations are regulated by one operator at a control board. At the time of our visit, installation was complete and technicians were checking the mechanism.

Tunnel Site is fortunate in having the source of its aggregate close at hand.

As a matter of fact, the west bank of the river just downstream from the site is one vast gravel bed. There is no need for an aggregate conveyor system such as that installed at Des Joachims. The material can be trucked to the storage piles in close proximity to the mixing plant. The stone comes in a handy size as if designed for the purpose and very little crushing is necessary.

On the east side of the main dam nine sluiceways will be constructed. Two of these will be equipped with steel gates and the remaining seven with stop logs. As there is a good deal of lumbering in the district a log chute will be provided.

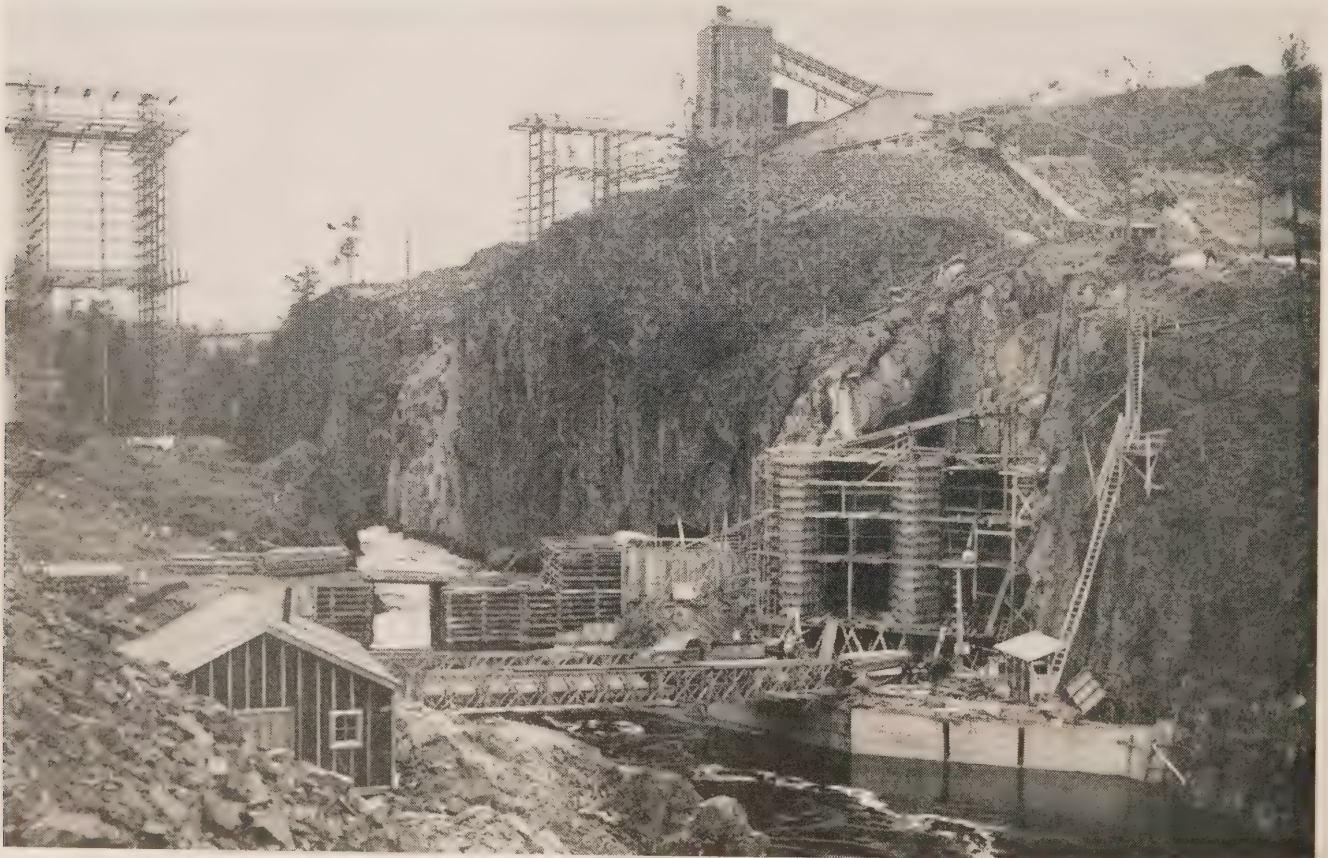
The Mississagi River will be flooded back to about 12 miles above the dam to form an elongated forebay. The actual water storage will be provided by Rocky Island Lake which is situated 50 miles due north of the development. The area of this natural reservoir will be enlarged by the flooding of approximately 12,000 acres and Hydro survey parties have been busy on the location for some time.

About 700 men are employed by the

Rayner Construction Company at Tunnel Site. They are comfortably quartered in cabins of the type which has now become standard for all Hydro projects. There is a hospital in the camp with accommodation for eight bed patients. A resident physician, Dr. J. E. Fenn, is in charge, assisted by two registered nurses. Well-equipped first-aid stations are established at various locations. The cafeteria arrangements are excellent.

Power from Tunnel Site will be fed into the pool for the Sudbury, Nipissing and Temiskaming districts. Surveys have been completed and construction camps are now being established along the right-of-way of the 110,000 volt transmission line which will be carried through to the frequency-changer station now under construction about four miles north-east of Sudbury. From this station both 60-cycle and 25-cycle current will be supplied as required.

Tunnel Site by no means exhausts the potentialities of the Mississagi River for waterpower developments. It is understood that the Commission has under consideration three other sites with a combined potential of approximately 78,000 kilowatts.

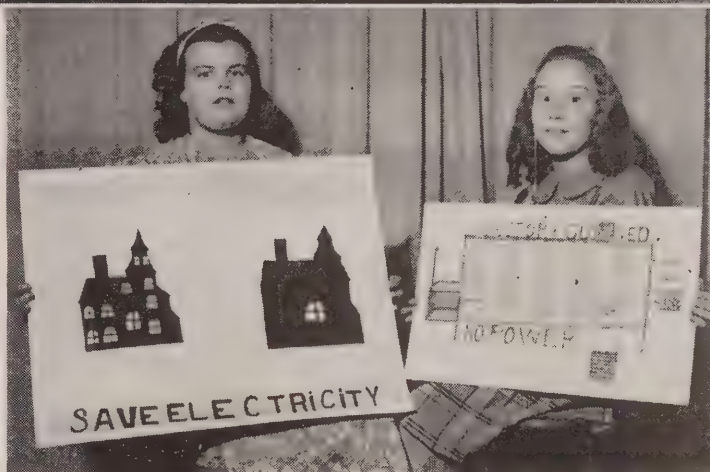


TUNNEL SITE is an unusually compact and concentrated development. In this over-all view are shown the concrete mixing plant, Bailey Bridging for the form cage of the main dam, the upstream cofferdam and the forms for the portal of the diversion tunnel.



TOP: POWER conservation was the theme of the six poster contests sponsored recently by the Stratford Public Utilities Commission. Some of the many entries, submitted by primary and secondary school pupils, are displayed in the window of the utilities building.

BOTTOM LEFT: Ingenious posters were submitted by Gordon Wood, (left) winner of the Junior Assembly contest, Stratford Collegiate Vocational Institute, and Russell Shantz, whose entry was judged the best among the Senior Assembly contestants.



CENTRE: POSTERS were judged for forcefulness of appeal as well as on artistic merit. Evelyn Sangster (left) of Juliet School, is the Grades 7 and 8 winner, while Lois Johnson (centre right) also of Juliet, won the Grade 6 contest.

BOTTOM RIGHT: Getting across their point effectively are the posters of Sylvio Parr, (left) winner of Grade 6, St. Joseph's Separate School, and Bert Eckensviller, who was awarded the prize for the school's Grades 7 and 8 contest.



'Twas The Night Before Christmas

AS DECEMBER 25 rolls around, once again the Ghost of Christmas Past rears its head. Acting on its suggestion, the Editor and Edith Kent of Hydro News did a spot of haunting and asked Hydro folk to dig deep into their memories and recall their most outstanding Christmases.

Unlike Scrooge's Ghost, their recollections were for the most part very pleasant. Here are some of the results:

Horses And Horsepower

IT WAS Christmas Eve 1910 . . . a cold, clear winter night. The silence of the night was broken by the clapping of horses' hooves on the glistening snow.

Mounted on one of the steeds was the late Sir Adam Beck and following immediately behind in a horse-drawn cutter was E. V. Buchanan, Manager of the London Public Utilities Commission.



Their mission was to keep a Christmas promise to the village of Byron, just outside London. The folk of that village, which is the site of the Queen Alexandra Sanatorium, Sir Adam's favourite project, had been promised Hydro power by Christmas Day.

And so Sir Adam and Mr. Buchanan used "horsepower" as they sped over the countryside that Christmas Eve to supervise the stringing of the last of the lines which brought Hydro to Byron on schedule.

And that is Mr. Buchanan's most memorable Christmas. It was his first in Canada, after having left his native Scotland.

His still-youthful, fresh, handsome countenance fairly beamed and his eyes twinkled as he recounted the story to Hydro News.

As one looks at this man, who has attained considerable eminence among the Hydro family, one cannot help but feel that he would have attained equal eminence before the footlights, possibly portraying the role of a gay, upright and handsome Dickensian character.

Sang Carols At Ear Falls

LEAFING THROUGH his diary, F. W. Clark, hydraulic engineer in the Commission's Generating Department, recalled the Christmas of 1929, which

he spent at Hydro's then-new station at Ear Falls, as his most memorable. He and his colleagues, A. Aeberli and D. A. McKenzie, had whiled away Christmas Eve singing carols more or less in tune with the radio.



On Christmas Day they partook of the traditional turkey with all the trimmings, and later boarded a plane for Sioux Lookout, on the way home for a well-earned holiday. On its last flight out of the bush before the winter freeze-up, the plane iced up a bit, but reached its destination without mishap.

Mr. Clark, who joins his grandchildren in hanging up his socks every Christmas, has been with the Commission 37 years in all, having served continuously since 1913.

When The "Children" Came Home

"ALL MY Christmases have been so wonderful I don't know which to pick," said Charles A. Walters, General Manager of the Napanee Public Utilities Commission.

"However, I think the best was in 1945 when my three children were all safely home from the war. We had a real celebration, with a huge tree, decorations, and all the rest of it. I was a very happy and thankful man that day."



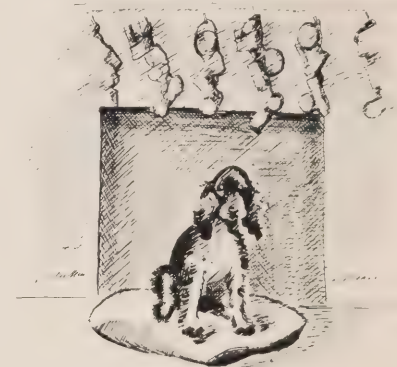
Mr. Walters' "children" are Dr. J. Allan Walters, formerly with the Medical Corps, now practising in Toronto;

ex-naval officer Charles A. Walters, Jr., employed in the decorating bureau of a large Toronto department store; and Mrs. F. L. Shipp (Margaret), who was one of the first 80 women to go overseas in the Nursing Corps. The latter has two children, whom Mr. Walters considers "the greatest grandchildren in the world."

A Boy And His Dog

A PICTURE of a small boy and a small puppy and a Santa Claus that whistled came to the mind of J. R. Sullivan, General Manager of the Woodstock Public Utilities Commission, and Past President of the A.M.E.U., when questioned by Hydro News as to his most memorable Christmas.

Like most seven-year-old boys, Russell Sullivan wanted a dog for Christmas. The big day arrived, Christmas 1902,



and the big moment, when the door would be opened into the library, where hung seven small stockings. Russell's father called through the closed door, "Santa, are you there?" And Santa whistled! A dog barked! Amid the excitement, Dad Sullivan instructed Santa to keep whistling till he was finished with the stockings. Then, after a pause, he opened the door and the youngsters burst into the room. There in front of the fireplace, thumping his tail, sat the cutest little black spaniel imaginable.

Explanations of the sound effects, coming some years later, detracted in no way from the thrill of the moment. It seems Father Sullivan had utilized a phonograph, and a record of "The Whistler and His Dog." A string was tied to the phonograph control and led through the keyhole, enabling Mr. Sullivan to start the machine and create quite a sensation.

And to this day that "little boy" still recalls very vividly the thrill he experienced when Santa brought him a puppy.

It Happened In 1920

IF YOU were to drop into the office of Dave Forgan, the Commission's Director of Construction, and ask him about his most memorable Christmas, his thoughts would immediately go back to the year 1920.

Hydro News asked him. He had an interesting story. It goes something like this:

On the evening of December 21, 1920, a group of tense, expectant men stood in the powerhouse at Cameron Falls.

Steadily for over a year they had worked to build a new Hydro plant. In the closing stages of the construction operations, they had worked day and night shifts, pitting their skill and hard labour against time. The stake: the supplying of electricity to Port Arthur, whose contract with the Kaministiquia Power Company expired at midnight on that night (December 21, 1920).

There had been no time for a trial run of the equipment. Only the essential parts of the station were ready for



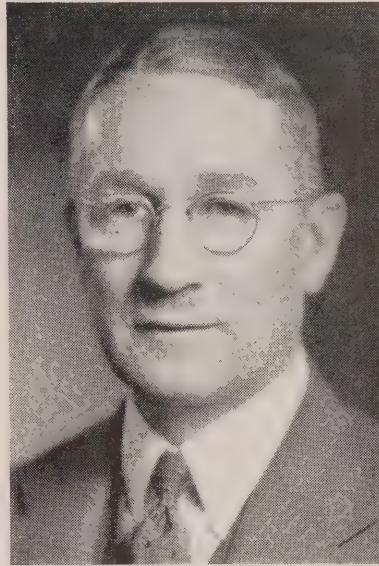
action, and the set-up in the powerhouse was a temporary one. Uncertainty was rife as to how everything would behave.

Finally, as the clock neared nine, someone flicked a switch. Long breaths of relief were exhaled as the generator purred like a pleased pussy.

Feeling that celebrations were in order, the men repaired to the upstairs of the office building. Although proper celebration was made somewhat difficult, said Mr. Forgan, by the existence of the OTA and the size of Jim McGraw's nightshirt, they managed to have a very good time indeed.

However, the strain of a year cannot be dissipated in a single evening, and the tension attached to the operation persisted till Christmas Day and after. To help make up for this and for the hard work put in by all concerned, Mr. Forgan related that the party was regaled with the finest Christmas dinner he had had for many a year. Among those in attendance were such old-timers as Jim McGraw, H. H. Leeming, Dr. Otto Holden, D. N. Johnston, and Stan Lotimer.

Len Dandeno Passes



L. G. Dandeno, Regional Manager of the East Central Division, suffered a heart attack and died in his Belleville office on November 20, three days after his 59th birthday.

Born in Hespeler, Ontario, in 1889, he was educated at Hespeler Public School, Galt Collegiate, and Toronto Normal School. He was a graduate of the School of Practical Science, University of Toronto.

Mr. Dandeno joined the Commission's staff on October 1, 1916, as a meterman in the Operating Department. In January, 1919, he was appointed meter engineer, and in May, 1923, became superintendent of the Thunder Bay System. He held this position until April, 1945, when he was appointed superintendent of the Eastern Division of the Southern Ontario System. He became Regional Manager of East Central Region last year.

Mr. Dandeno is survived by his widow, one son, Paul, in the Station Planning Department of the H.E.P.C. in Toronto, a daughter, Mary Margaret, at home, and two other daughters, Milda and Elizabeth, attending the University of Toronto.

J. R. Tuck Dies

J. R. Tuck, prominent Port Colborne merchant and Chairman of that town's Hydro-Electric Commission, died at his home on November 30, at the age of 72. Although he had been in failing health for some months, his death was unexpected.

The late Mr. Tuck took an active interest in municipal politics, serving as

a town councillor for many years, and as Mayor in 1929 and 1930. In 1920 he was appointed a Hydro Commissioner, and served intermittently in that capacity until his death, filling the office of Commission Chairman for a total of eight years.

He was born and educated in Burlington, where he learned telegraphy, worked in a general store, and served his apprenticeship as a watchmaker. In March, 1900, he opened his first jewellery store in Port Colborne, and carried on a highly successful business up to the time of his death.

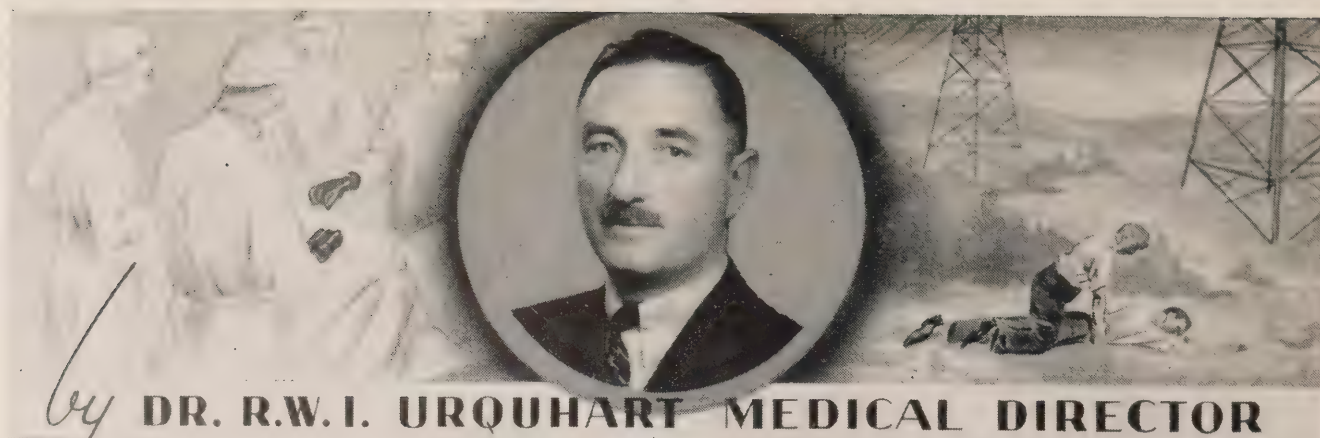
He was an amateur radio fan, and constructed and installed in his home an amateur sending and receiving set.

The late Mr. Tuck was a member of the MacNab Lodge, A.F. and A.M.; King Hiram Chapter, Royal Arch Masons; Jacques de Molai Preceptory, Niagara Falls; Rameses Temple of the Mystic Shrine; Beacon Lodge, I.O.O.F.; Port Colborne Lions Club; and Port Colborne Lawn Bowling Club. He was organizer of the first Chamber of Commerce of



Port Colborne and a past president of the Port Colborne and Humberstone Retail Merchants Association.

Surviving are his widow, the former Florence Cook of Hamilton; two sons, Fred, in business with his father, and Howard, an employee of International Nickel Company; two sisters, Miss Ruth Tuck of Toronto and Mrs. E. W. Vivian of Hamilton; and two brothers, Vernon in Grimsby and Orville of Dunnville.



RELAXATION

The autumn months have come and gone and the winter months are now upon us. In Southern Ontario at least, the usual cold and snow have at this writing failed to put in an appearance. The hustle and bustle of winter preparation is over and all nature seems to be resting and gathering strength for the cold blasts ahead. It is a period of relaxation.

Such periods of relaxation are not uncommon in nature's scheme of things. Viewed with an observant eye, evidence of periods of activity and periods of quiescence is to be seen everywhere. The rapid tumultuous growth of spring is followed by the repose of summer. The urgency of ripening and maturation culminating in the blaze of fall colour is followed by the pre-winter lull—the so-called Indian summer. The first stormy blasts of winter cover the earth with snow like a glistening blanket. So with all the little animals of field and forest; they, too, have their periods of activity and rest and many of them retire to sleep the long winter through. Man alone, pricked by the spur of ambition and driven by the whip of progress in this, our modern civilization, often fails to allow himself time to relax.

While this is particularly true of the city dweller, it is not so true of those whose occupations keep them closely in touch with nature. By virtue of this close association, they are compelled to adapt themselves to her rhythms. Periods of intense activity are followed by long quiet spells. Happy is the man who adjusts himself cheerfully to these demands.

Tensions Build Up

The city dweller on the other hand, surrounded on every side with mechanisms which make him almost, if not entirely, independent of nature, has an altogether different problem. Relieved of the periodic restrictions imposed by nature, he is free to pursue his activities at all hours and in all seasons. Too many succumb to this temptation and inevitably trouble occurs. Tensions build up and with no release or relaxation, nervous symptoms develop.

BRANTFORD EXPERIMENT

For the past three years the water supply of Brantford, Ontario, has been receiving minute amounts of sodium fluoride—one part per million. Because a whole generation of children must grow a crop of permanent teeth and careful observation be made of their dental condition during that time, the Brantford experiment will take about seven more years before results can be fully determined.

A representative group of 1800 children is being checked by the dental health division of the Department of National Health and Welfare in co-operation with Brantford health authorities and the Ontario Department of Health. Their dental condition is being compared with that of a group of 1800 children in Sarnia, where the water is fluorine-free, and in another Ontario city where the water contains natural fluorine.

That this is true in a broad sense is evident to every doctor. A large proportion of the people who see him have no organic disease, although it is true that they do not feel well. They have lost that sense of wellbeing which is normal to every individual in good physical and mental health. They may complain of a variety of symptoms such as inability to sleep, loss of appetite, pain, vomiting, shortness of breath, or a whole host of others. These symptoms are very real to the patient and it is sometimes most difficult to convince him that they can be produced by other than serious organic disease. They are, however, produced often by the upsetting effect on the nervous system of various emotional states or tensions. The particular form that the disturbance takes varies a great deal and depends on the particular nervous mechanisms involved. In any case the symptoms are the result of disturbed function in the organs supplied by those particular nerves. This type of disturbance has often been described as functional, or in the newer nomenclature, psychosomatic disorder.

It is generally conceded that the majority of these functional or psychosomatic disturbances would not occur were emotional tensions or strain relieved from time to time by proper relaxation. The man who works hard at the office all day and takes his worries home with him at night is a good prospect for functional disorder. So too is the man who works hard all day in the office and works equally hard at some hobby at home in the evening. While a change of work is to some extent relaxing, it is not as good as real rest. In this connection the evening blackout was not all bad. With lack of adequate lighting there was not much for the family to do but to sit around and wait for the lights to come on. In fact some people were very grateful for the enforced rest and a few are continuing the habits of resting developed during the blackout period.

It is not felt that work in itself ever did much harm to anyone. It is the unwise habits sometimes associated with work that cause trouble. By this is meant late hours and improper meals, undue hurry and confusion, worry and strain with the resulting lack of real rest and recreation. If these habits are not allowed to develop it is surprising how much can be accomplished with relative ease.

Much can be done by getting a proper perspective in relation to the job, the home, and in fact to the whole business of living. One has to learn to parcel out his day—budget it much as one budgets his income. If this is done wisely, there is always the little saving of energy which in time of stress can be turned to good advantage. Once the day is over and the time of rest is at hand, it should suffice that one has dealt with each problem and performed each task to the best of his ability. There is nothing to be gained in worrying about what has or has not been done, nor does it profit one to worry about what the next day will bring forth. It is a time for rest, for relaxation, for enjoyment of the good things that life has to offer. Thus both physical and mental powers are restored and refreshed for the new day. Thus is nature's rhythm completed.

HYDRO AT THE ROYAL WINTER FAIR



VISITORS TO Canada's premier agricultural exposition, the Royal Winter Fair, were again reminded of Hydro's part in an expanding Canadian economy by the Commission's graphic display island that portrayed all phases of the vast construction program now being rushed to completion. Enlarged photos of the various new power projects were prominently displayed on both sides of the exhibit, while coloured slides were shown from an automatic projection booth. In addition, Hydro personnel were on hand to answer the many questions on the development and explain the paramount importance of conserving electricity. The upper illustration shows a general view of the Commission's exhibit with a number of interested visitors in attendance. In the lower reproduction, members of the Commission's staff are shown with some of the visitors.

Lighter Lines



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9-2

"Tell me the truth—because, if you want it for yourself, we have a vastly superior, de luxe model—."

* * *

Secretary: Your wife wants to kiss you over the phone.

Business man: Take the message and I'll get it from you later.

* * *

Frosh: Were you ever bothered by athlete's foot?

Soph: Just once—when a fullback caught me with his girl.

* * *

Judge: Will you tell the court what passed between you and your wife during the quarrel?

Defendant: A flatiron, a rolling pin, six plates and a tea kettle.

* * *

"Did the patient take his medicine religiously?"

"No, he swore every time."

* * *

"The instalment man is here again, madam."

"Tell him to take a chair."

"He's already taken three chairs and the livingroom sofa, madam."

* * *

Construction man: Can I have the afternoon off to go shopping with my wife?

Foreman: No.

C. M.: Thanks.

* * *

Noah: Why don't you leave the Ark the way the other animals did?

Snakes, sadly: We can't—you told us to go out and multiply, and we're adders.

CHRISTMAS

By Janet Kingstone

*Christmas is a happy time,
Its joy is everlasting;
But who remembers words like these
When through the cold wind's blasting,
You fight your way, distraught and worn
Through shoppers all irate
To buy a tie for Uncle Cy
Or stockings for Aunt Kate?*

*"Joy to the world," the choristers sing,
And "Peace on earth"—uplifting,
'Til down your neck you know for sure
The beauteous snow is drifting.
Shivering more, you climb aboard
The tardy bus or trolley
And give a shove, but not with love,
To someone's aunt—how jolly!*

*But when the Day does come around,
Or even when it's near,
You find that you've just got to say,
"Merry Christmas, Happy New Year."*

She: My sin is vanity. I spend hours admiring my good looks.

He: That isn't vanity, that's imagination.

* * *

Everything about the air force interested the American visitor who never ceased to ask questions.

"Say," he exclaimed at last, "how is it that there seems to be so many Scotsmen among the fliers?"

The guide, a bit fed up, snatched at the chance.

"Well sir, since the Scots found out every cloud has a silver lining, we just can't keep them out."

* * *

The guide was showing a group of soldiers a small memorial pillar on Bunker Hill. It stood about a foot high.

"Here is the place where many brave men fell," he said.

"I wouldn't doubt it," piped one of the soldiers. "I darn near broke my neck on it myself."

Eskimo (male): You know, dear, I drove my dog team a thousand miles to tell you I love you.

Eskimo (female): That's a lot of mush.



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"Pspt! Make believe you're not with me, Nancy!"

NEWS IN BRIEF

Ban Lighting For Display

As an alternative to closing one full day a week, Owen Sound stores and offices discontinued the use of electricity for lighting and display purposes from 8:30 a.m. to 11 a.m. Mondays, Tuesdays, Thursdays and Fridays, and from 12:30 p.m. to 6 p.m. on Wednesdays.

A committee of A. G. Saunders, Thomas Joseph and Alex Wilkie recommended this measure to the Public Utilities Commission. The ban on lighting and electricity used for display purposes went into effect November 15 and applies to all stores, offices, gasoline stations, hotels and restaurants.

Night Patrol

A nightly patrol has been inaugurated by the Public Utilities Commission at Waterloo to check on residences in that city. In an effort to eliminate wasteful use of electricity, letters were sent to a number of Waterloo consumers stating that there seemed to be wasteful use of lights and asking their co-operation. The letter contained a warning that action will be taken against consumers whose names appear on future lists.

Hawk Causes Power Cut-Off

An unscheduled power interruption in the Georgetown-Norval area occurred recently when a hawk flew into a high tension line near Norval. Occurring at five o'clock, the power interruption continued until a few minutes after seven. Hydro crews from Toronto located the break and repaired the damaged wires. Because Georgetown residents had not, until then, experienced any power cuts, they believed that this cut was only the first of many. Housewives preparing supper and the farmers, most of whom have milking machines, were among the consumers most affected.

Harness Hair!

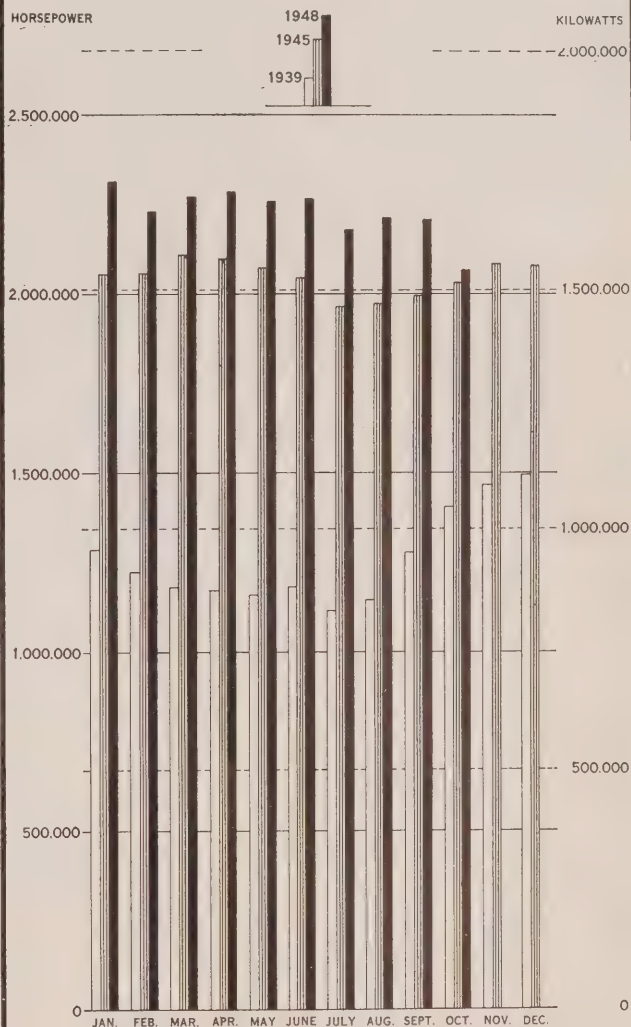
Girls, if your friends tell you that your hair-do is shocking they may be right. Certain U.S. engineers are now claiming that the static electricity which crackles in a girl's hair when she combs it has been harnessed to a flash-bulb. Generating 8,900 volts with every stroke, she can take a picture of herself while she combs her hair. The electricity generated is also powerful enough to fire the spark plugs in the engine of an automobile.

New Plant At Chatham, N.B.

Official opening of a \$2,000,000 power plant at Chatham, New Brunswick, took place during a brief ceremony in November. Hon. J. G. Boucher, Chairman of the N.B. Electric Power Commission termed the steam-operated plant a monument to the ability and workmanship of the people of the province. The plant, generating 16,750 horsepower, was opened when Mr. Boucher turned the main switch, starting the 12,000 kv.-a. turbo-generator. Speaking at a luncheon following the ceremonies, Mr. Boucher praised the work of those who had planned the new plant, particularly the late Dr. John Stephens who had been prominent in formulating the plans.

SOUTHERN ONTARIO SYSTEM EMBRACING NIAGARA, GEORGIAN BAY AND EASTERN ONTARIO DIVISIONS

PRIMARY LOAD



POWER DEMANDS AND TOTAL GENERATION

AREA SERVED BY	MAXIMUM 20-MINUTE PEAK KW		PER CENT INCREASE
	OCTOBER, 1948	OCTOBER, 1947	
PRIMARY DEMANDS — ACTUAL LOADS PLUS CUTS			
SOUTHERN ONTARIO SYSTEM . . .	1,700,640	1,868,809	— 9.0
THUNDER BAY SYSTEM . . .	126,110	112,585	+ 12.0
NORTHERN ONTARIO PROPERTIES	<u>208,952</u>	<u>188,340</u>	+ 10.9
TOTAL . . .	2,035,702	2,169,734	— 6.2
TOTAL GENERATION — INCLUDING POWER PURCHASED			
SOUTHERN ONTARIO SYSTEM . .	1,542,975	1,684,269	— 8.4
THUNDER BAY SYSTEM	132,210	112,585	+ 17.4
NORTHERN ONTARIO PROPERTIES	<u>212,132</u>	<u>206,285</u>	+ 2.8
TOTAL . . .	1,887,317	2,003,139	— 5.8

MUNICIPAL LOADS, SEPTEMBER, 1948

SOUTHERN ONTARIO SYSTEM

NIAGARA DIVISION (25-Cycle)

	H.P.	Domes- tic Con- sumers
Acton	2,396	620
Agincourt	398	184
Ailsa Craig	267	164
Alvinston	174	230
Amherstburg	1,729	813
Ancaster Twp.	525	431
Arkona	135	133
Aurora	2,099	861
Aylmer	1,380	830
Ayr	456	243
Baden	659	171
Beachville	868	173
Beamsville	753	453
Belle River	379	368
Blenheim	745	620
Blyth	304	197
Bolton	361	207
Bothwell	185	204
Brampton	4,568	1,784
Brantford	27,049	4,089
Brantford Twp.	2,973	2,098
Bridgeport	342	212
Brigden	156	135
Brussels	358	273
Burford	497	260
Burgessville	130	63
Burlington	2,270	1,416
Burlington Beach	682	732
Caledonia	510	480
Campbellville	92	60
Cayuga	283	200
Chatham	10,281	945
Chippawa	490	413
Clifford	171	141
Clinton	1,292	640
Comber	201	139
Cottam	131	149
Courtright	84	107
Dashwood	223	112
Delaware	133	78
Delhi	750	704
Dorchester	156	158
Drayton	205	180
Dresden	887	536
Drumbo	186	100
Dublin	104	66
Dundas	3,619	1,600
Dunnville	2,004	1,142
Dutton	305	244
East York Twp.	14,874	13,555
Elmira	2,060	644
Elora	800	374
Embro	247	139

	H.P.	Domes- tic Con- sumers
Erieau	352	234
Erie Beach	54	94
Essex	963	608
Etobicoke	16,297	8,484
Exeter	1,358	611
Fergus	1,972	790
Fonthill	337	340
Forest	883	552
Forest Hill	8,111	3,993
Galt	14,738	4,622
Georgetown	3,252	878
Glencoe	310	231
Goderich	2,683	1,473
Granton	113	90
Grimsby	1,276	711
Guelph	16,058	6,156
Hagersville	1,399	449
Hamilton	176,735	45,670
Harriston	833	398
Harrow	1,071	381
Hensall	408	233
Hespeler	4,146	892
Highgate	115	112
Humberstone	769	811
Ingersoll	4,145	1,940
Jarvis	231	166
Kingsville	838	692
Kitchener	35,881	9,660
Lambeth	196	160
LaSalle	505	334
Leamington	3,608	1,922
Listowel	2,148	900
London	50,416	21,930
London Twp.	667	547
Long Branch	2,781	1,848
Lucan	392	207
Lynden	180	108
Markham	592	380
Merlin	127	140
Merritton	12,141	1,037
Milton	2,222	623
Milverton	629	286
Mimico	3,664	2,478
Mitchell	1,355	568
Moorefield	89	79
Mount Brydges	161	181
Newbury	68	90
New Hamburg	1,017	412
Newmarket	2,891	1,215
New Toronto	13,794	2,202
Niagara Falls	13,416	5,367
Niagara-on-the-Lake	1,379	696
North York Twp.	18,761	9,611
Norwich	641	419
Oil Springs	195	117
Otterville	211	174

	H.P.	Domes- tic Con- sumers
Palmerston	830	433
Paris	2,490	1,240
Parkhill	459	358
Petrolia	1,115	860
Plattsville	318	126
Point Edward	2,407	392
Port Colborne	2,192	1,762
Port Credit	1,351	711
Port Dalhousie	1,331	758
Port Dover	895	875
Port Rowan	155	420
Port Stanley	1,191	948
Preston	5,620	1,817
Princeton	248	105
Queenston	217	85
Richmond Hill	815	485
Ridgetown	758	648
Riverside	1,813	1,860
Rockwood	246	189
Rodney	239	290
St. Catharines	22,057	9,406
St. Clair Beach	143	129
St. George	232	185
St. Jacobs	478	142
St. Marys	2,630	1,169
St. Thomas	10,286	4,920
Sarnia	13,887	5,880
Scarborough Twp.	9,836	7,837
Seaforth	1,415	576
Simcoe	3,725	1,803
Smithville	524	196
Springfield	118	121
Stamford Twp.	4,415	2,942
Stoney Creek	491	289
Stouffville	727	458
Stratford	10,251	4,777
Strathroy	2,329	890
Streetsville	875	227
Sutton	748	502
Swansea	3,465	2,190
Tavistock	906	316
Tecumseh	912	794
Thamesford	384	160
Thamesville	328	273
Thedford	224	185
Thorndale	199	88
Thorold	3,717	1,471
Tilbury	1,111	632
Tillsonburg	2,283	1,343
Toronto	437,045	156,033
Toronto Twp.	7,394	3,914
Wallaceburg	8,197	1,710
Wardsville	87	75
Waterdown	426	291
Waterford	552	448
Waterloo	8,394	2,586
Watford	611	324

MUNICIPAL LOADS, SEPTEMBER, 1948

	H.P.	Domes- tic Con- sumers
Welland	12,987	3,330
Wellesley	241	149
West Lorne	731	265
Weston	6,319	1,815
Wheatley	419	263
Windsor	62,062	27,603
Woodbridge	1,313	345
Woodstock	10,655	3,704
Wyoming	190	185
York Twp.	28,650	23,837
Zurich	232	168

(66½-Cycle)

Bronte	288	244
Oakville	3,073	1,285
Trafalgar Twp.	989	661

GEORGIAN BAY DIVISION

(60-Cycle)

Alliston	816	478
Arthur	317	272

Bala	498	336
Barrie	6,529	2,787
Beaverton	490	365
Beeton	184	159
Bradford	622	322
Brechin	88	66

Cannington	446	279
Chatsworth	157	123
Chesley	1,142	490
Coldwater	208	164
Collingwood	3,970	1,759
Cookstown	194	138
Creemore	285	194

Dundalk	394	232
Durham	780	499

Elmvale	325	210
Elmwood	161	89

Flesherton	181	145
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Grand Valley	335	202
Gravenhurst	1,738	780

Hanover	2,483	944
Holstein	46	68
Huntsville	1,831	813

Kincardine	1,389	810
Kirkfield	49	41

Lucknow	658	340
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MacTier	167	128
Markdale	350	238
Meaford	1,512	831
Midland	4,797	1,826
Mildmay	286	211
Mount Forest	1,060	538

	H.P.	Domes- tic Con- sumers
Neustadt	133	136
Orangeville	1,369	803
Owen Sound	9,850	4,185
Paisley	316	227
Penetanguishene	1,664	910
Port Carling	453	211
Port Elgin	812	590
Port McNicoll	178	261
Port Perry	620	420
Priceville	25	48
Ripley	161	135
Rosseau	77	71
Shelburne	429	337
Southampton	945	644
Stayner	513	333
Sunderland	302	163
Tara	214	175
Teeswater	317	245
Thornbury	226	278
Thornton	67	71
Tottenham	140	173
Uxbridge	707	478
Victoria Harbour	129	297
Walkerton	1,672	801
Waubaushe	267	260
Warton	689	506
Windermere	132	74
Wingham	1,492	643
Woodville	197	129

EASTERN ONTARIO DIVISION

(60-Cycle)

Alexandria	617	510
Almonte	858	718
Apple Hill	69	78
Arnprior	2,209	993
Athens	200	220
Bath	89	83
Belleville	12,105	4,142
Bloomfield	293	192
Bobcaygeon	338	425
Bowmanville	3,851	1,247
Braeside	277	100
Brighton	756	614
Brockville	9,623	3,339
Cardinal	633	408
Carleton Place	2,921	1,173
Chesterville	706	273
Cobden	283	198
Cobourg	3,997	1,545
Colborne	412	299
Deseronto	491	428
Finch	188	134
Frankford	358	262
Hastings	228	284
Havelock	277	316

	H.P.	Domes- tic Con- sumers
Iroquois	461	337
Kemptville	725	425
Kingston	23,228	8,962
Lakefield	687	432
Lanark	199	198
Lancaster	86	133
Lindsay	5,335	2,405

Madoc	510	347
Marmora	266	279
Martintown	78	68
Maxville	197	196
Millbrook	186	200
Morrisburg	792	465

Napanee	2,220	979
Newcastle	361	159
Norwood	334	247

Omeme	229	198
Orono	164	199
Oshawa	25,065	7,374
Ottawa	42,776	16,317

Perth	2,911	1,200
Peterborough	25,382	8,283
Picton	2,349	1,254
Port Hope	4,558	1,590
Prescott	1,794	851

Renfrew	1,437	1,501
Richmond	155	105
Russell	180	129

Smiths Falls	5,025	2,360
Stirling	585	305

Trenton	7,794	2,037
Tweed	677	366

Warkworth	120	162
Wellington	667	370
Westport	200	174
Whitby	2,342	1,163
Williamsburg	143	96
Winchester	746	316

THUNDER BAY SYSTEM

(60-Cycle)

Fort William	19,355	8,379
Nipigon Twp.	569	329
Port Arthur	29,842	7,257

NORTHERN ONTARIO PROPERTIES

Nipissing District

(60-Cycle)

North Bay	7,227	3,809
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Patricia District

(60-Cycle)

Sioux Lookout	602	613
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Sudbury District

(60-Cycle)

Capreol	695	463
Sudbury	14,628	9,122



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